

Superphosphate Production Up In Fiscal Year

**Substantial Increase Is
Noted in Census Report
For Year Ending in June**

WASHINGTON—Production of superphosphate in the U.S. for the 12-month period, July, 1957-June, 1958, was 5% greater than that of the previous fiscal year, according to figures just issued by the U.S. Department of Commerce, Bureau of the Census.

The greatest gains were registered in concentrated superphosphate which was produced in the quantity of 874,111 tons in 1957-58, as compared to 728,610 tons the previous year.

(Turn to SUPERPHOSPHATE, page 8)

Tariff Commission Issues Figures on Pesticide Output

WASHINGTON—Production figures on pesticides during May and June have been released by the U.S. Tariff Commission. The report is of preliminary nature, and in all cases the figures are on the basis of 100% content of the specified material, the commission says.

DDT production for May, according to the report, was 12,184,886 lb., and for June, 12,172,548 lb.

Output of 2,4-D for May was 2,272,995 lb., and 1,797,585 lb. for the previous month. Of 2,4-D esters and salts, the production for May and June was 3,060,422 and 1,663,680 lb., respectively.

Benzene hexachloride production, including lindane, was 5,245,581 lb. for May, and 5,318,094 lb. for June, 1958.

The output of 2,4,5-T for May was 506,899 lb. and for June, 564,333 lb.

Farm Bill Meets Its First Test in Corn Referendum Scheduled for December

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—USDA has determined that the nation's cotton producers who accept the new lower level of price support next year will be permitted to expand their acreage allotments by 40% over and above their pro-rata share of the basic acreage of approximately 16.6 million acres. This latter acreage is allotted for the next two crop years—1959-60—under the provisions of the recently enacted farm bill.

According to usually reliable sources available to Croplife, this means that there probably will be approximately 18.25 million acres put into cotton cultivation in 1959. This estimate is an abstract figure but its estimate base is made from considerations such as the measurement of farm sizes and a weighing of expansion possibilities in the newer Western area of the cotton belt where there is elbow room for expansion of cotton acreage.

These conclusions at USDA confirm the belief among trade economic sources who saw in the new farm bill a tacit acceptance by Congress of economic influences which have already been making their mark particularly in the old cotton belt. Here there has been a slow but noticeable shift from cotton to feed grain crops despite the retarding influence of the old rigid high price support philosophy.

Another influence on cotton acreage for next year may be found in the lowered levels of support for

corn and the elimination of the old commercial corn belt.

In recent years, cotton acreage allotments reduced plantings of that crop. In many instances, cotton farmers planted heavily in corn, and this shift from cotton to corn put many counties into the commercial corn county classification.

That meant that many cotton farmers were encouraged to put their removed acres into corn, since they obtained the higher loan for corn in a commercial corn area county than if they were faced with a corn crop on their former cotton land at the much lower non-commercial support level.

This is a negative view, but nevertheless important. It means that as land goes back into production of cotton, a much smaller commercial corn belt will result. The end prod-

(Turn to REFERENDUM, page 8)

★ ★ ★

USDA to Announce Corn Support Levels for 1958 Crop at End of Month

WASHINGTON—USDA officials influential in administrative decisions at top policy levels of that agency have informed Croplife of the probability that USDA will announce at the close of this month a low loan level rate of corn support for the 1958 corn crop for non-compliers with acreage allotments at \$1.10 bu. This is the same level as for the 1957 crop and confirms what Marvin McLain, Assistant Secretary of Agriculture, told the 85th Congress earlier this year. He said he

(Turn to CORN SUPPORT, page 8)

Fertilizer Use Pattern on Corn Recorded for States And Regions of the U.S.

By J. R. Adams, L. B. Nelson and D. B. Ibach

Drs. Adams and Nelson are with the Soil and Water Conservation Research Division, and Mr. Ibach with the Farm Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Md.

Part IV. Corn

CORN is probably the best suited of the major crops to a study of geographic variations in fertilizer use. Corn is grown in practically all farming areas of the U.S.; it covers a large acreage—78 million in 1954—60% of which received fertilizer (1); and it has a high requirement for each of the three primary fertilizer nutrients.

Table 1 shows a steady increase in the percent of the corn acreage fertilized. U.S. averages show that 44% was fertilized in 1947, 48% in 1950, and 60% in 1954. Greatest increases were in the Northern Plains, Mountain, and Pacific States, and the smallest were in the Northeast, Appalachian, and Southeast states where fertilizer had been used the longest.

Quantities of nitrogen applied per fertilized acre increased consistently in all of the major geographic regions. Average N applications for the U.S. were 10 lb. in 1947, 15 in 1950, and 27 in 1954 (2). Phosphate application rates over these same periods, however, showed no consistent changes except possibly for moderate increases in the Corn Belt and lake states and the northern plains states. Potash rates, on the other hand, increased in all regions except the northern plains, mountain, and Pacific. For the U.S. as a whole, the quantities of K₂O added per fertilized acre averaged 12 lb. in 1947, 15 in

1950, and 25 in 1954. Consumption of N, P₂O₅, and K₂O, areawise, seems to be approaching a 1:1:1 ratio in most of the eastern regions.

Corn acreages, percent of the acreage fertilized, tons of fertilizer applied, and quantities of nutrient per fertilized acre are given in Table 2 by individual states. Geo-

(Turn to FERTILIZER, page 20)

IMC Dedicates New Administrative Center

(Photo on page 2)

SKOKIE, ILL.—The formal opening of International Minerals & Chemical Corp.'s new \$5 million administrative and research center here has been announced by the company. The facilities, situated on a 21-acre site, include three main structures, the administration building, operations building and cafeteria, connected by multi-purpose units. One of the latter is an electronic business data processing center, and another, an auditorium-lounge. An enclosed walkway links new structures to a fourth building, the single-story research center built in 1951.

The new center has been under construction for nearly two years, with the ground-breaking ceremonies having taken place in December, 1956. Turner Construction Co. was responsible for erecting the buildings.

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Dr. James S. Bowman

JOINS HAZLETON LABS. — Dr. James S. Bowman, entomologist formerly with the Army Chemical Center, Edgewood, Md., has joined the staff of Hazleton Laboratories in Falls Church, Va. His work will be primarily in the field of agricultural chemicals, according to Dr. Lloyd W. Hazleton, president. Under Dr. Bowman's direction, the 90-acre experimental farm maintained by Hazleton for biological and chemical research will be expanded to include studies of plant disease and insect life. This work will supplement the laboratories' service of analyzing pesticide residues on crops and their effects on animals. Dr. Bowman earned his master's degree at Ohio State University and was awarded his Ph.D. at the University of Wisconsin.

Good Strawberry Crop Seen for Oregon

PORTLAND, ORE.—Oregon's 1958 strawberry crop now carries a post harvest estimate of 72,380,000 lb., some 21% less than the record 1957 output of 91,500,000 lb. However, it is 30% larger than the 1949-56 average of 55,830,000 lb., according to the Portland USDA crop reporting service.

This year's better-than-average production was cut by heavy losses from frequent rains and picker shortages at harvest time.

The 1958 crop average yield is estimated at 4,700 lb. an acre compared with 5,000 lb. last year and the 1949-56 average of 3,586 lb.

Changing Economy Theme Of New England Meeting

MELVIN VILLAGE, N.H.—"Agricultural Development in a Changing Economy" will be the theme for the annual New England Fertilizer Conference slated for the Bald Peak Colony Club, Melvin Village, N.H., Sept. 24.

Registration for the institute-sponsored conference will begin at 3:30 p.m. on Sept. 23.

Appearing on the program during the morning of the 24th will be Dean W. B. Young, College of Agriculture, University of Connecticut, who will preside, and Dr. W. H. Garman, National Plant Food Institute's Northeastern regional director, who will give introductory remarks and the welcome.

Speakers and their topics for the conference include the following: "Urban Industrial Development," Dr. W. C. McKain, Jr., head, department of rural sociology, University of Connecticut; "Future of New England Agriculture and the Fertilizer Industry," Dr. I. F. Fellows, department of agricultural economics and farm management, University of Connecticut; "The Future of the Dairy Industry," Dr. T. M. Adams, head, department of agricultural economics, University of Vermont; "The Future of Potato Growing," Dr. A. L. Perry, department of agricultural economics and farm management, University of Maine; "The Future of Fruits and Vegetables," Dr. W. H. Drew, department of agricultural economics, University of New Hampshire; and "The Future of Tobacco in the Connecticut Valley," Prof. P. L. Putnam, head, department of agricultural economics and farm management, University of Connecticut.

Dr. A. A. Spielman, associate director, agricultural experiment station, University of Connecticut, will preside at the afternoon session.

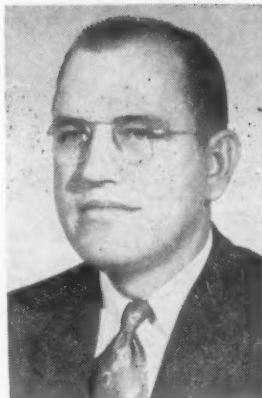
A hospitality hour and banquet are scheduled in the evening.

Requests for hotel reservations should be directed to Dr. W. H. Garman, National Plant Food Institute, 1700 K Street, N.W., Washington 6, D.C.

The program was arranged by the Northeastern members of the NPFI in cooperation with colleges in the area.

NEW ASSISTANT TREASURER

LOS ANGELES—Roland E. Tornquist has joined American Potash & Chemical Corp. as assistant to the treasurer, the firm has announced. Mr. Tornquist previously was a consultant in governmental relations at San Bernardino, Cal.



E. Bruton Peacock



Walter Stroud, Jr.



E. Kendall Eakes

Smith-Douglass Names Three to New Positions

NORFOLK, VA.—Three new personnel appointments have been announced by Smith-Douglass Co. Persons involved include E. Bruton Peacock, Walter Stroud, Jr., and E. Kendall Eakes.

Mr. Peacock has been appointed manager for the company's operations at Wilmington, N.C. He was formerly manager of the Kinston, N.C., plant. Mr. Peacock is a native of North Carolina, was graduated from the university of that state and has been with Smith-Douglass for 17 years.

He will be succeeded in his position at Kinston by Mr. Stroud, also a native of North Carolina and a graduate of Wake Forest College. Mr. Stroud has been with S-D since 1949 and most recently was a sales supervisor at Kinston.

The firm also announces the appointment of E. Kendall Eakes, Rocky Mount, N.C., as assistant to M. W. Darden, manager of the company's Norfolk branch. Mr. Eakes is a native of Greenville, N.C., attended the University of Alabama and North Carolina State College where he took a degree in agronomy. He joined S-D in 1948.

Velsicol Gibberellins Approved for Some Uses

CHICAGO — Velsicol Gibberellins have been cleared by the Federal Food and Drug Administration for use on certain raw agricultural commodities, the company has announced. Uses which have been cleared by Food and Drug include seed treatment of lima beans, snap beans, soya beans and peas at the rate of ½ gram per 100 lb. This treatment causes faster emergence. Also, the dipping of seed potatoes in a solu-

tion of 1 ppm gibberellins to break dormancy has been approved.

Food and Drug also accepted the spraying of Thompson Seedless and Black Corinth grapes with concentrations of 5 to 50 ppm at the rate of 5 to 50 gallons an acre for increased fruit set.

Smog Damage Affects Respiration of Plants

RIVERSIDE, CAL.—Smog damage causes plants to "breathe" faster and slows down their manufacture of food, a University of California scientist reports.

Glenn W. Todd, assistant biochemist at Riverside, found that the respiration rate increases as much as four times when pinto bean leaves are exposed to ozone or ozonated hexene gas, air pollutants present in smog.

The rate of photosynthesis of treated bean leaves decreased considerably. This effect and the stimulation of respiration were directly related to the development of visible injury symptoms in tissues of the leaves, Mr. Todd noted.

This relation is not true for all plants, he noted. The respiration rate of citrus leaves increased during exposure to heavier doses of the gases without the appearance of visible injury. Isolated cells within the citrus leaf are probably injured during exposure to the gas.

APPLICATOR KILLED

PECOS, TEXAS—Crop dusting pilot John William Martin, 37, of San Angelo, Texas, was killed when his plane crashed to the ground about 30 miles south of here. He is survived by his widow and three children who live in San Angelo. Observers say the aircraft failed to make a turn, evidently because of engine failure, and was demolished. The pilot worked for the Alvin Dusting Co.



NEW ADMINISTRATIVE QUARTERS—International Minerals & Chemical Corp. has formally opened its new administrative and research center at Skokie, Ill. Above is a shot of the five story administrative and research



center from Southwest across main plaza. Buildings shown are, left to right: Operations, operations annex, administration building, employees' lounge and cafeteria. At the right is shown the interior of the employees' lounge.



Spencer "Mr. N" Ammonium Nitrate stays dry in new all-polyethylene bags, even during a driving rain. This new bag solves the

problem of limited storage space because "Mr. N" can be stored for weeks on porches and docks, in cribs or in fields.

Spencer Chemical Company announces the biggest bag news in the fertilizer industry in 18 years:

Fertilizer in a Weather-Proof Bag That Your Customers Can Re-Use:



You can make a porch a shed with polyethylene bags. This dealer is using plastic bags as a wall, so that he can even store paper bags outside!



"Free" tractor cover! 24 plastic "Mr. N" bags heat-sealed together make a tarpaulin. A ton of "Mr. N" provides enough bags to make a tarpaulin worth about \$12—and big enough to cover a haystack.

Spencer "Mr. N" Ammonium Nitrate now comes in a clear, strong plastic bag that can be stored for several weeks right in the open . . .

First to give you prilled fertilizer for easier application . . . first to give you polyethylene-lined bags to stop caking . . . Spencer Chemical Company now brings you the most important new development in fertilizer packaging since the switch to paper bags 18 years ago!

This new development is a 50-lb. all-polyethylene bag, proved by nearly three years of testing to keep ammonium nitrate drier than any other bag made! In fact, polyethylene bags of Spencer "Mr. N" are so weatherproof that even a drenching rain can't get inside!

Storage space is increased because you can even make use of porches and cribs to store rainproof polyethylene bags.

Breakage losses are cut, both during moving and storage, because polyethylene is so much more tear-resistant than paper. For example, in test shipments of 51,240 fifty-pound bags, only 0.77% of the bags were broken. Even when bags break, loss is much less because polyethylene is tear-resistant. And bags that do break can be quickly mended with pressure-sensitive tape.

Also, these tough, weather-proof transparent bags go right on being useful, even after they are empty. Picture at left shows just one example.

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With each shipment of "Mr. N" in these new bags, Spencer Chemical Co. will send you free announcement ad mats and copies of booklet, "How To Re-Use Plastic Fertilizer Bags." Also, your own announcements will be backed by full page ads in the September issues of Farm Journal, Capper's Farmer, and Progressive Farmer, reaching virtually every farmer in the Midwest and South.

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fertilizer _____

INSECT AND PLANT DISEASE NOTES

False Chinch Bug on 6,000 Acres Sorghum

STATE COLLEGE, N.M.—False chinch bug (*Nysius* sp.) is infesting approximately 6,000 acres of sorghum in Curry County. Estimated loss in some fields over 50%. Heavy infestations also damaging sorghums in Quay, Roosevelt, Lea, De Baca and Chaves counties.

Heavy infestations of *Lygus* bugs (*Lygus* sp.) in several fields of seed alfalfa in Chaves, Lea and Eddy counties.

Spotted alfalfa aphid (*Therioaphis maculata*) is showing up again in fields in Eddy and Chaves counties, and thrips are damaging seed alfalfa near Carlsbad, Eddy County.

The corn earworm (*Heliothis zea*)

is feeding in sorghum heads in Lea County. Damage heavy but spotty. Heavy infestations destroying corn ears.

Fall armyworms (*Laphygma frugiperda*) are damaging sorghum heads near Lovington, Lea County.

The Southwestern corn borer (*Zea-diartrea grandiosella*) is in severe infestations damaging corn in De Baca, Quay, Curry and Roosevelt counties, causing stalks to break.

Grasshoppers are damaging sorghum heads in Curry and Quay counties—damage most severe along fence rows and ditch banks.

Heavy infestations of mites in several orchards in Otero, Lincoln, Bernalillo, Sandoval and Rio Arriba counties. Heavy infestations damag-

ing foliage near High Rolls, Otero County and Ft. Sumner, De Baca County.

Heavy infestations of peach beetles in orchards of southern half of state doing considerable damage to ripening fruit.

Alfalfa Aphid on Upsurge in Colorado

FT. COLLINS, COLO.—After a slow start, the spotted alfalfa aphid is building up in major agricultural areas of Colorado.

Field surveys in the Arkansas Valley indicate populations are increasing in Prowers, Bent, Otero, Crowley and Pueblo counties, according to recent reports of the Colorado insect detection committee.

On the Western Slope, the winged form of the aphid is most abundant. New infestations have appeared at Palisade and Orchard Mesa in Mesa County, averaging

CUTWORMS ACTIVE

OTTAWA, ONT., CANADA—Cutworms have caused severe damage on the Canadian prairies this year, due to near drouth conditions. Hard hit were sections of Alberta and Saskatchewan. The outlook for 1959, according to the Canadian Department of Agriculture, is for a further increase in cutworms. This warning is based on surveys and rainfall recorded in May and June when the larvae were actively feeding, the department says.

between 3,000 and 5,000 per 100 sweeps.

Delta County reports light infestations of 100 to 400 per 100 sweeps. In Garfield County winged forms of the spotted alfalfa aphid were first taken on Aug. 11.

Heavy infestations of the fall webworm have been found in mountain canyons in Larimer, Boulder, Jefferson, Douglas, El Paso and Fremont counties. Applications of DDT have been applied in some important scenic areas.

Surveys of potato fields in Garfield County show a build-up of the tuber flea beetle. The average ranges between 80 and 200 per 100 sweeps.

In Larimer County noticeable increases in aphid populations have been observed on ornamentals and shade trees. Elm aphids are especially abundant in the Ft. Collins area.

The two-spotted mite continues to be a problem on both Eastern and Western Slopes. It is damaging corn in Arkansas Valley counties, and is infesting pear orchards in Mesa County.

Adults of the Western corn root worm have been observed feeding on tassels and silk in Prowers, Bent, Otero, Pueblo and Larimer counties. They average 2 to 4 to the plant.

Tomato fields in Adams County are infested with the tomato hornworm, an average of two larvae per plant.

In the Eastern Colorado counties several species of the blister beetle are causing damage to corn, potatoes, alfalfa, ornamentals and other plants.

Cool Days in Wisconsin Slow Grasshoppers

MADISON, WIS.—Grasshoppers were slowed considerably by cool weather, and improved alfalfa growth due to rains has made their damage less recognizable. It is expected that red-legged grasshopper nymphs will mature and adults will continue to feed on forage. Egg laying by this species has not been noted, but should begin before long where adult numbers are very high in Waupaca and Portage counties and other lighter soil areas.

Large numbers of this 'hopper in Wood County were in the second and third instar, but there were a few adults. Juneau and Adams counties had quite high 'hopper populations. In eastern and southern counties counts, in general, were less than 10 grasshoppers per square yard, but a few scattered fields ran higher. In western Dane County, adults of the migratory grasshopper and the differential grasshopper comprised a minor portion of the 'hopper population. Based on observations thus far, the incidence of parasitic nematodes of grasshoppers appears to be somewhat less than last year.

European corn borer second brood moth flight continues. There has been an increase in corn earworm moth flight in spite of cool nights. "Hopperburn" caused by potato leafhoppers to unsprayed potatoes is becoming more pronounced.

The hornworm attack to tobacco



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in Dane County appears to have begun somewhat later this year. Not more than 5% to 10% of the plants have been involved in most fields up to this time and harvest has begun.

Although populations of corn leaf aphids continue to remain high, there has been comparatively little flight activity as indicated by trapping at the University of Wisconsin farms at Madison. This is also true of other aphid species and appears to be a result of cool temperatures. In Columbia County field corn colonies of the corn leaf aphid appeared to be building, but parasite populations seem to be high.

All forms of the Mexican bean beetle have been observed during the week on garden snap beans in the same area in the west side of Madison, where they have persisted for about fifteen years.

A scale insect (possibly the rose scale) has been observed at the bases of canes in some red raspberry plantings. This insect has seldom if ever caused significant damage to raspberries in Wisconsin.

Moderate populations of the cabbage looper, the imported cabbage worm and the cabbage aphid are reported from the Kenosha-Racine area.

Arizona Reports Active Insect Situations

PHOENIX, ARIZ.—Salt marsh caterpillars have been causing great concern in Yuma, Maricopa, Pinal and Pima counties. These insects are very difficult to control, and thorough applications of insecticides are needed if results are to be secured.

Yuma County reports that damage is being done by perforators and bollworms, and salt marsh caterpillars are also doing a good deal of damage. Lygus also present, but controls of the other insects will control them.

Graham County reports that bollworms and stink bugs are still causing the greatest injury in the county.

Cabbage loopers and salt marsh caterpillars, along with some perforators, are showing up in Pima County. Cotton bollworms are also present in almost all fields, along with a few beet armyworms.

Salt marsh caterpillars, bollworms, beet armyworms, cotton leaf perforators, and cabbage loopers are causing the greatest injury at the present time in Pinal County.

Maricopa County reports that new growth, squaring and flowering have resumed in most every area. In all areas surveyed (August 29), salt marsh caterpillars were the Number 1 problem. There is also a new crop of cabbage loopers showing up, along with perforators. Bollworms are also active in many fields. Some fields continue to have serious infestations of Lygus and stink bugs.

In Chandler-Gilbert-Queen Creek-Scottsdale-Mesa, salt marsh caterpillars are the big problem. A new hatch of loopers also present. In some fields, bollworm counts 2 to 5 per 50 plants. Perforators remain high, along with stink bugs and Lygus.—J. N. Roney.

Armyworms Beset New Jersey Counties

NEW BRUNSWICK, N.J.—Armyworm moths are numerous but few worms are present. Some damage has been reported recently in South Jersey to field corn. Fall armyworm moths and larvae are more numerous than last week. Late plantings of field corn are being damaged now by fall armyworm and the second brood of corn borers which are now quite active but not generally heavy. Some young borers are entering the tips of ears. Corn earworm moth flights are not heavy at trap locations in Burlington County. Heaviest moth flights of season were in first two weeks of August.

Green clover worm, a green active looper, is more numerous than for years in Central New Jersey. Downy

mildew has been reported from Ocean and Middlesex counties. Strict adherence to spray program is recommended.

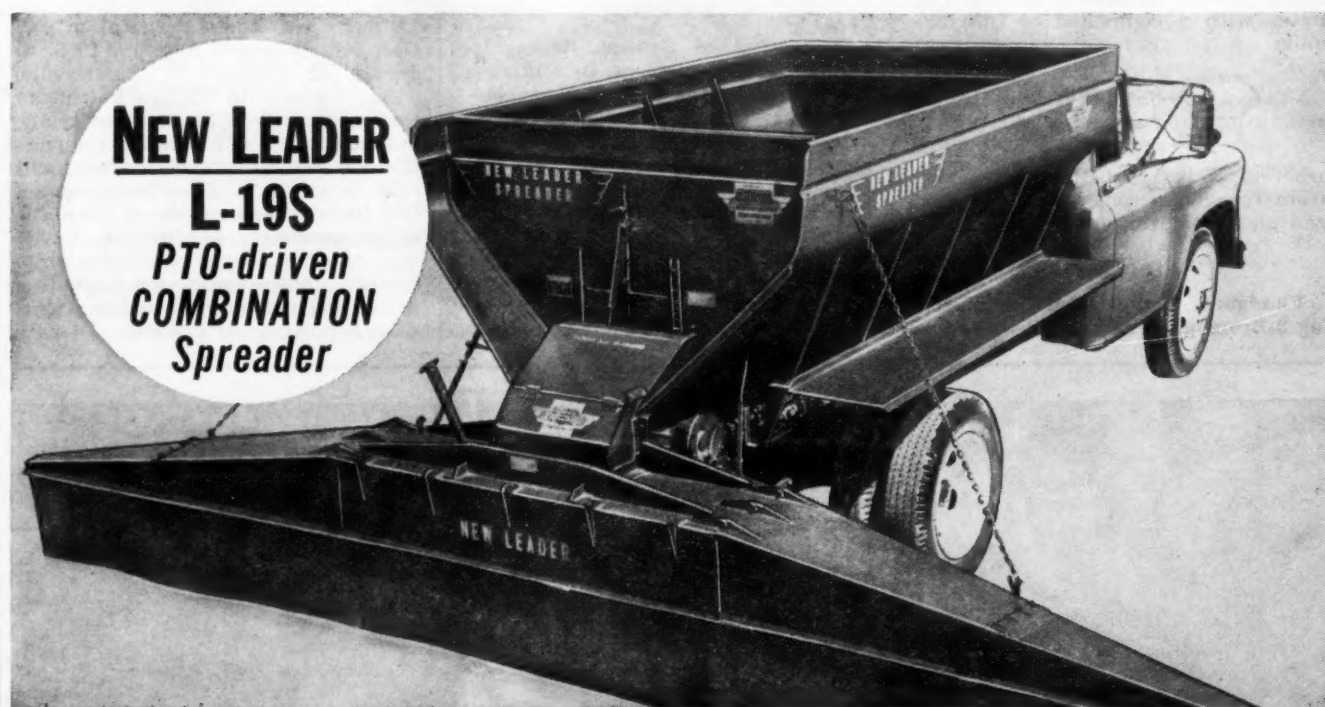
Potato leafhopper populations have been up to 8 per net sweep in collections of New Jersey Department of Agriculture surveyors, with most fields having 1-4 per sweep. However, growth has not been apparently impaired nor have any typical yel-

lowing symptoms been reported. Lush growth of plants is due to frequent rains.—Spencer H. Davis, Jr., Leland G. Merrill, Jr. and William E. Collins.

RECEIVES HONORARY DEGREE

SACRAMENTO, CAL.—Gilbert L. Stout, chief of the Bureau of Plant Pathology, California Department of Agriculture, has received an honorary degree of doctor of science from

Miami University of Ohio, in recognition of his accomplishments in agricultural and plant pathological work. Mr. Stout has had a special interest in the virus diseases of fruit trees and grapevines and is the author of numerous technical papers and bulletins in this field. He came to the Department of Agriculture as a plant pathologist in 1930 and has been chief of the bureau since 1950.



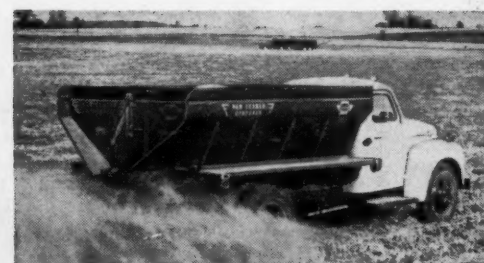
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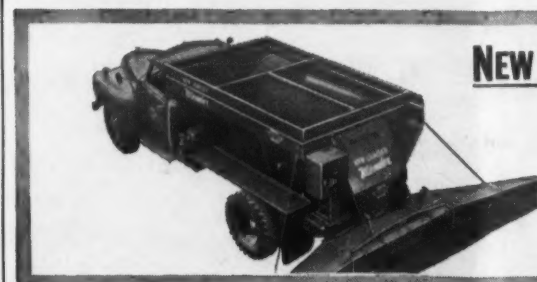


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TENN., Donelson—Tennessee Dist. Co.

UTAH, Murray—Oscar Bennion

W. VA., Buckhannon—Farmers' Truck & Impl. Co.

WIS., Rice Lake—Ostrom-Johnson Co.

Sun Prairie—Brooks Industrial Sales

CANADA, New Brunswick, Fredericksen—Tractors & Equip. Ltd.

Ontario, Ottawa and Toronto—General Supply Co., of Canada
Quebec, Montreal—General Supply Co., of Canada

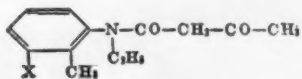
HIGHWAY EQUIPMENT COMPANY
636 D. Ave. N. W. Cedar Rapids, Iowa

Our Business is S-P-R-E-A-D-I-N-G-I
• New Management • New Distribution
• New Nationwide Service!
... means more profit for you!

Industry Patents and Trademarks

2,848,365

Production of Novel Acetoacetanilides, and Acaricides Produced Therefrom. Patent issued Aug. 19, 1958, to Henry Martin, Zurich, and Ernst Habicht, Schaffhausen, Switzerland, assignors to Cilag, Ltd., Schaffhausen, Switzerland. A method of killing mites, which comprises treating the mites with a compound of the formula



wherein X is a substituent selected from the group consisting of hydrogen and a chlorine atom.

2,849,361

Fumigant Compositions Comprising 3-Bromopropyne and 1,2-Dibromo-

3-Chloropropene. A fumigant composition comprising as active toxic ingredients from about 1 part by weight of 3-bromopropyne and from about 0.1 to 9 parts by weight of 1,2-dibromo-3-chloropropene, the active toxic ingredients of said composition being mutually activating.

2,849,498

Processing of Benzene Hexachloride Alcoholic Solutions. In a process for the refining of benzene hexachloride wherein the benzene hexachloride is present in alcoholic solution in contact with a metal subject to corrosion by the alcoholic solution, the step which comprises adding to the alcoholic solution a nitrate of a metal selected from the group consisting of alkali metals and alkaline earth metals in an amount sufficient to inhibit the corrosion.

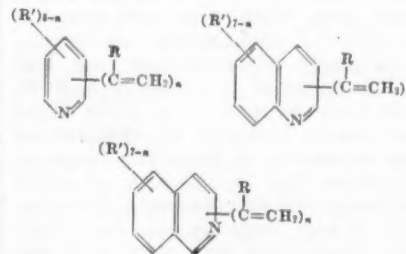
2,849,362

Fumigant Compositions Comprising 3-Bromopropyne and 1,3-Dichloropropene. A fumigant composition comprising as active toxic ingredients from about 1 part by weight of 3-bromopropyne and from about 0.3 to 4 parts by weight of 1,3-dichloropropene, the active toxic ingredients of said composition being mutually activating.

2,848,356

Fungicides, Their Preparation and Use. Patent issued Aug. 19, 1958, to James E. Pritchard, Bartlesville, Okla., assignor to Phillips Petroleum Co., Bartlesville. The process for the preparation of a fungicidal composition comprising reacting a metal salt of a carboxylic acid containing an active halogen atom selected from the group consisting of chlorine, iodine and bromine being positioned on a carbon atom alpha to an activating group and not over 20 carbon atoms with a polymer of a compound hav-

ing a structure selected from the group consisting of



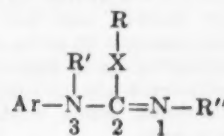
wherein n is an integer selected from the group consisting of 1 and 2, R is selected from the group consisting of H and CH_3 , and each R' is individually selected from the group consisting of nitro, alkoxy, halo, hydroxy, cyano, aryloxy, aryl, haloalkyl, alkaryl, hydroxyaryl, hydrogen and alkyl, not more than 12 carbon atoms being present in the total of said R' groups, to form a water-insoluble quaternary metal salt of the polymer.

2,849,363

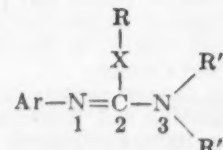
Fumigant Compositions Comprising 1,4-Dichloro-2-Butyne and 1,2-Dibromo-3-Chloropropene. A fumigant composition comprising as active toxic ingredients from about 1 part by weight of 1,4-dichloro-2-butyne and from about 0.3 to 9 parts by weight of 1,2-dibromo-3-chloropropene, the active toxic ingredients of said composition being mutually activating.

2,849,306

Herbicidal Method and Composition Employing Aryl Pseudoureas. Patent issued Aug. 26, 1958, to Norman E. Searle, Wilmington, Del., assignor to E. I. duPont de Nemours & Co., Inc., Wilmington. A herbicidal composition comprising an inert solid pest control adjuvant and in amount sufficient to exert herbicidal action an aryl pseudourea selected from the group consisting of compounds represented by the formula



and



and the salts of said compounds, where Ar is selected from the group consisting of phenyl and substituted phenyl radicals, X is selected from the group consisting of oxygen and sulfur, R is selected from the group consisting of unsubstituted and halogen-substituted monovalent alkyl and monovalent alkenyl radicals containing from 1 through 6 carbon atoms, and R' and R'' are selected from the group consisting of hydrogen and monovalent alkyl and monovalent alkenyl radicals containing from 1 through 12 carbon atoms, with the proviso that not more than 1 of R' and R'' is hydrogen.

The following patents on various fumigant compositions were issued Aug. 26, 1958, to Charles R. Youngson, Long Beach, and Cleve A. I. Goring, Garden Grove, Cal., assignors to The Dow Chemical Co., Midland, Mich. Below are the patent numbers and brief descriptions of the fumigant compositions involved:

2,849,367

Fumigant Compositions Comprising Ethylene Dibromide and 1,2-Dibromo-3-Chloropropene. A fumigant composition comprising as active toxic ingredients from about 1 part by weight of ethylene dibromide and from about 3 to 10 parts by weight of 1,2-dibromo-3-chloropropene, the active toxic ingredients of said composition being mutually activating.

quality fertilizer begins here...

UNIFORM GRANULE SIZE

FREE FLOWING

with TRONA'S*
new, specially-sized
granular
POTASH

Quality fertilizer granulation begins with Trona's all-new, specially-sized granular muriate of potash. The carefully regulated and controlled screen size results in reduced segregation and uniformity of finished product. Whatever your mixing method—batch or ammoniation, Trona's new granular assures a quality fertilizer uniform in particle size.

TRONA American Potash & Chemical Corporation

LOS ANGELES • NEW YORK • SAN FRANCISCO • PORTLAND (ORE.) • ATLANTA • CHICAGO • SHREVEPORT • COLUMBUS (O.)
Main Office: 3000 West Sixth Street, Los Angeles 54, California
New York Office: 99 Park Avenue, New York 16, New York
Plants: TRONA AND LOS ANGELES, CALIFORNIA; HENDERSON, NEVADA; SAN ANTONIO, TEXAS
(AMERICAN LITHIUM CHEMICALS, INCORPORATED AND SAN ANTONIO CHEMICALS, INCORPORATED)

Producers of: BORAX • POTASH • SODA ASH • SALT CAKE • LITHIUM • BROMINE • CHLORATES • PERCHLORATES • MANGANESE DIOXIDE and other diversified chemicals for Industry and Agriculture

2,849,364

Fumigant Compositions Comprising 1,4-Dichloro-2-Butyne and Ethylene Dibromide. A fumigant composition comprising as active toxic ingredients from about 1 part by weight of ethylene dibromide and from about 0.1 to 9 parts by weight of 1,4-dichloro-2-butyne, the active toxic ingredients of said composition being mutually activating.

2,849,365

Fumigant Compositions Comprising 1,4-Dichloro-2-Butyne and 3-Bromopropyne. A fumigant composition comprising as active toxic ingredients from about 1 part by weight of 3-bromopropyne and from about 0.1 to 9 parts by weight of 1,4-dichloro-2-butyne, the active toxic ingredients of said composition being mutually activating.

2,849,366

Fumigant Compositions Comprising 1,4-Dichloro-2-Butyne and 1,3-Dichloropropene. A fumigant composition comprising as active toxic ingredients from about 1 part by weight of 1,3-dichloropropene and from about 0.3 to 9 parts by weight of 1,4-dichloro-2-butyne, the active toxic ingredients being mutually activating.

2,849,368

Fumigant Composition Comprising 3-Bromopropyne and Ethylene Dibromide. A fumigant composition comprising active toxic ingredients from about 1 part by weight of ethylene dibromide and from about 3 to 9 parts by weight of 3-bromopropyne, the active toxic ingredients of said composition being mutually activating.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

Orkin-Aire, in capital letters, for insecticides. Filed May 15, 1957, by Orkin Exterminating Co., Inc., Atlanta, Ga. First use Feb. 28, 1957.

Fire Cracker, in heavy capital letters, for insecticides and agricultural fungicides. Filed Aug. 30, 1957, by Hayes-Sammons Chemical Co., Mission, Texas. First use Aug. 5, 1957.

Plantstim, in capital letters, for plant growth-inducing preparation. Filed July 11, 1957, by Plant Products Corp., Blue Point, N.Y. First use, Feb. 19, 1957.

Garden-Green, in capital letters, for fertilizers. Filed April 4, 1958, by Price's Producers, Inc., El Paso, Texas. First use Feb. 22, 1958.

Stanley, in outlined capital letters, for insecticides, liquid insecticides, and disinfecting chemicals. Filed May 17, 1956, by Stanley Home Products, Inc., Westfield, Mass. First use Sept. 15, 1931.

Lone Star, in capital letters, with-in rectangular design for fertilizers. Filed Jan. 31, 1958, by Texas Farm Products Co., Nacogdoches, Texas. First use in the year 1946.

Campbell's Organic Base Green-Glo, for fertilizer. Filed March 5, 1958, by Campbell Fertilizer Co., Inc., Houston, Texas. First use Aug. 14, 1950.

Ban-A-Weed, in "X"-shaped design, for combination weed control and lawn food. Filed April 8, 1958, by Stadler Fertilizer Co., Cleveland, Ohio. First use Jan. 20, 1958.

Northrup King, in capital letters, for fertilizers. Filed April 14, 1958, by Northrup, King & Co., Minneapolis, Minn. First use Feb. 1, 1951.

Miraclid, in capital letters, for plant food. Filed April 17, 1958 by Stern's Nurseries, Inc., Geneva, N.Y. First use July 7, 1952.

Trel, in capital letters, for fertilizers and fertilizer ingredients. Filed

April 18, 1958, by Smith-Douglass Co., Inc., Norfolk, Va. First use Jan. 23, 1958.

The Real McCoy, in capital letters, for lawn fertilizer and weed-free manure. Filed April 22, 1958, by Organics, Inc., Denver, Colo. First use April 15, 1958.

SmiDO, in hand-drawn letters, for fertilizers. Filed April 23, 1958 by Smith-Douglass Co., Inc., Norfolk, Va. First use at least as early as 1943.

Pep-Soil, in capital letters, for soil conditioner. Filed May 1, 1958, by Lone Star Cotton Co., Lubbock, Texas. First use April 1, 1958.

Floraganic, in capital letters, for plant food. Filed May 6, 1958, by Wilson and Toomer Fertilizer Co., Jacksonville, Fla. First use Oct. 12, 1957.

27 Gran, in hand-drawn capital letters, for fertilizers. Filed May 13, 1958, by Smith-Douglass Co., Inc.,

Norfolk, Va. First use Jan. 27, 1958.

ABC, in capital letters, for plant food. Filed May 16, 1958, by A. B. Chrisman Grain Co., Meredosia, Ill. First use in March, 1955.

Armorganic, in capital letters, for fertilizers. Filed May 29, 1958 by Armour & Co., Chicago. First use Dec. 29, 1956.

Adds to Fertilizer Staff

MONTPELIER, IDAHO—Recent additions to the staff of the Central Farmers Fertilizer Co. at its Idaho phosphate works located in Georgetown Canyon, include:

Harry E. Stewart, employed as chief accountant. He is a graduate of Southern Methodist University where he received a B.A. degree in business administration. He was formerly employed by Arthur Young and Co., auditors, Chicago. He also was employed for five years in Casper, Wyo. Howard L. Moore, Jr., most recent-

ly of Baton Rouge, La., has been employed as a mechanical engineer. He received his bachelor's degree in engineering from New Mexico A&M and his most recent employment has been with Kaiser Aluminum Chemical Corp., Oakland and Gramercy, La.

Max A. V. Johnston has assumed a position of chief chemist. He comes from Pocatello, where he was employed by Westvaco Chemical Co. as assistant chemist and chemical engineer.

TEXAS DUSTER DIES

PECOS, TEXAS—Ray Johnson, 43, of Pecos, was killed when his crop dusting plane crashed on a cotton farm about 10 miles southeast of town, after one wheel of his plane hit the standpipe of an underground water line. The plane flipped and caught fire, throwing Johnson clear of the flames, but killing him instantly.

THE MAN WITH THE



MULTIWALL PLAN



UNION
PACKAGING SPECIALIST
"WHITEY" CAMPBELL

shows
packer how
to pocket
\$85,000

\$85,000! That's the annual dollar savings one user of Multiwall bags will enjoy as a result of a recent Union packaging survey.

The survey, made by Union Packaging Specialist "Whitey" Campbell, showed that: (1) \$57,000 a year could be saved simply by switching the company's 3-ply domestic baler bags to 2-ply's.

(2) reinforced sewing construction on 100-lb.

packages would save 20# basis weight per bag . . .

and additional thousands of dollars in costs depending on the number of bags used.

These were the major recommendations made and put into effect through Union's 5-Star Packaging Efficiency Plan. Total savings are expected to amount

to more than \$85,000 when all improvements are completed. How much could this plan save you?

Union Multiwall Recommendations are based on this 5-Star Packaging Efficiency Plan



- DESIGN
- EQUIPMENT
- CONSTRUCTION
- SPECIFICATION CONTROL
- PLANT SURVEY

Better Multiwall performance through better planning



UNION'S PACKAGE ENGINEERING DEPARTMENT will study your Multiwall bagging methods and equipment and make appropriate recommendations, regardless of the brand of Multiwalls you are now using.

UNION MULTIWALL BAGS
UNION BAG - CAMP PAPER CORPORATION
233 BROADWAY, NEW YORK 7, N. Y.

REFERENDUM

(Continued from page 1)

uct of this condition means that the commercial corn belt will shrink back into somewhat normal size and the referendum vote on corn acreage allotments this year will probably be beaten.

While in the case of the cotton producers' decision as to the alternative choices between high levels of support and acreage controls at the basis of 16.6 million and a lower level of support with a permitted acreage expansion of the national allotted acres of 16.6 million by 40% may be somewhat of an abstraction, in the case of corn USDA officials are convinced that the commercial corn belt will vote down acreage allotments—and such a decision will be final for all time unless Congress again changes the law. The USDA opinion in the case of corn is not an

abstraction but backed up by solid directional guides.

The predicted unfavorable outcome of the corn referendum, on which commercial corn belt farmers will vote in December, could end acreage allotment controls for the corn belt and put the national price support for corn at the higher of 65% of parity or 90% of the national average market price for the three preceding years.

On the present parity level for corn, USDA officials now estimate that the level of support for the 1959 corn crop if the acreage allotment proposal is rejected would be about \$1.14—1.15 bu.

The corn belt farmers will vote in the December referendum a choice between:

1. Under acreage allotments a

level of support for corn in 1959 for cooperators of approximately \$1.32 bu., with a further acreage allotment cut by another 10% of allotted acres for that year with no assured level of support for non-compliers, or

2. A level of support within the range noted with no acreage allotment controls.

A collateral influence which may be seen as a referendum factor is that without allotments next year USDA is forecasting a probable national acreage cultivation of 77.5 million acres. This takes into consideration that in 1959 there will be acreage reserve provision for soil bank participation, and it also takes into consideration commitments to the conservation reserve program of the soil bank.

Responsible opinion here indicates that the corn farmers will vote down further acreage allotments on corn despite the fact that the price support level of available payments to the old commercial corn belt farmers

would be approximately 17¢ bu. higher than under a "no-acreage" allotment program.

In previous referenda it required a two-thirds favorable vote to adopt acreage allotment controls. Under the new act all that is required is a simple majority of farmers everywhere in the nation voting. For this reason USDA officials are hopeful that the farmers may see the advantage of eliminating the acreage allotment proposal with its division of the corn acres of the nation into the commercial and non-commercial categories.

Most important, trade observers, in commenting on the passage of the new farm bill, said that the elimination of the commercial corn belt higher level of support is merely the recognition of the changing economic aspects of the grain producing requirements of the Southeast and California, where expanding poultry and livestock populations were forcing this same condition despite the fact that the old corn price support programs were delaying or retarding this economic influence.

CORN SUPPORT

(Continued from page 1)

would authorize a low loan level of support for corn which would not cause farm distress in the commercial Corn Belt.

This outlook is of major significance to the fertilizer industry in the Corn Belt which contemplates booking of new business for next year, particularly for fall fertilization incentives.

This decision, expected late in September after the Commodity Credit Corp.'s advisory committee meets here about Sept. 27, will put a firm floor under corn at country points, those tributary to the Chicago futures market, at about \$1 bu. It certainly means a corn country price floor in Minnesota at about that level and also those counties which deliver corn at Chicago from Iowa and Illinois points.

This level of support will mean that corn farmers in those areas can measure their probable cash income from that crop at \$1 bu. and will give them an index of how much cash they will have on hand from that crop to make forward commitments for fertilizer for fall and winter use against bank loans or credit advances for such use purposes.

SUPERPHOSPHATE

(Continued from page 1)

12-month period. The gain amounted to some 20%.

Normal and enriched superphosphate, however, registered a slight loss, from 1,402,083 tons last year, to 1,337,209 tons during the year just ended.

Other phosphatic fertilizer materials registered a healthy gain, however. Rising from 228,661 tons last year, the production of other phosphatic fertilizers rose to 269,309 tons this year.

Totals came to 2,480,629 tons for the 1957-58 year, as compared to 2,359,354 tons, or 5% greater than the production of the previous year.

The Bureau of the Census says that the data contained in these statistics include information from all plants known to have facilities for manufacturing superphosphate and other phosphatic fertilizer materials, including government-owned plants. The quantities are expressed in terms of equivalent 100% available phosphoric acid.

DIES ON BIRTHDAY

SUNNYVALE, CAL.—A crash of a crop dusting plane killed pilot Louis Alfred Jackson, of San Jose, Aug. 10, Jackson's 35th birthday.



MORE FARMERS BUY

Arcadian NITROGEN

than any other brand!

ARCADIAN®

LIQUID NITROGEN PRODUCTS

- **URAN® Nitrogen Solution**
Urea, Ammonium and Nitrate Nitrogen
- **FERAN® Nitrogen Solution**
Ammonium and Nitrate Nitrogen
- **NITRANA® Nitrogen Solution**
Nitrate and Ammonia Nitrogen
- **Anhydrous Ammonia**
Concentrated Ammonia Nitrogen

ARCADIAN

DRY NITROGEN PRODUCTS

- **AMMONIUM NITRATE**
Pelleted Nitrogen Fertilizer
- **UREA 45 Nitrogen Fertilizer**
Pelleted Urea Nitrogen
- **A-N-L® Nitrogen Fertilizer**
Nitrogen with Magnesium
- **AMERICAN NITRATE of SODA**
Nitrate Nitrogen and Sodium

All of the above products are for direct application to the soil. ARCADIAN Nitrogen is also the leading source of nitrogen used in the manufacture of mixed fertilizers.

ARCADIAN Nitrogen is easy to sell! The ARCADIAN trade-mark is a symbol of quality and dependability to farmers. They buy and use more ARCADIAN Nitrogen than any other brand.

When you handle ARCADIAN Nitrogen, you are served by America's long-time leading producer of the most complete line of nitrogen products—liquid and dry—on the market. You have many different forms of nitrogen from which to select those best suited to your customer's needs.

You benefit from millions of tons of nitrogen experience and the enterprising research that originated many of the nitrogen products which are now generally used. Farmers are pre-sold on ARCADIAN. Your sales are supported by the most powerful advertising and promotion campaign ever conducted to sell nitrogen.

It pays to sell the nitrogen that farmers prefer! More farmers buy ARCADIAN Nitrogen than any other brand!

NITROGEN DIVISION

Allied
Chemical

New York 6, N.Y. • Hopewell, Va. • Ironton, O. • Raleigh, N.C. • Columbia 1, S.C. • Indianapolis 20, Ind. • Omaha 7, Neb.

Kalamazoo, Mich. • St. Paul 4, Minn. • Columbia, Mo. • Atlanta 3, Ga. • San Francisco 4, Cal. • Memphis 9, Tenn.

Advertising Can Win More Customers

By Al P. Nelson
CropLife Special Writer

In a previous article on advertising for fertilizer and farm supply firms, the importance of getting a map of the area in which the dealer sells was stressed. Rates from newspapers, radio, television stations, circulation of media and listening areas, should be among the information secured.

The next important matter is advertising copy.

Are you going to be content most of the time with advertising copy culled from national fertilizer ads, using the exact phrases that have ap-

peared in ads in many other states? Or are you going to try to get variety into your copy, especially that valuable local appeal?

Of course a dealer can publish some fertilizer ads which are furnished by suppliers to present their viewpoint. And usually the suppliers can write better copy than the average fertilizer dealer concerning the merits of fertilizer. This is due to suppliers' vast fund of experience and data on experiments. A dealer is wise to use some of these ads now and then.

But—don't forget to get the local

flavor into your ad. Now and then show a picture, or write copy telling how Pete Smith got a 120-bu. per acre yield of corn through using your fertilizers. Lots of people living in your trade area know Pete Smith and they like to read of his agricultural prowess. They'll mention Pete's publicity when they meet him in church, at the town meeting or at a farm picnic. And Pete will like this notoriety of a sort and you and your fertilizer will be discussed favorably before many farmers. No telling how much business will come your way because Pete Smith and his friends talk about his corn yield.

Of course, don't overdo these testimonials, for that is what they

are. Be sure that Pete or some other farmer you so publicize agrees to let you do this. Such case histories help give punch to your advertising. Start such ads along about harvest time for fall plow-down promotion. Also run some in January, February and March showing what key farmers did the year before.

Feature pasture renovation if you are in a dairy region and feature it between hay crops.

That's what Dairyland Fertilizers, Inc., Marshall, Wis., does during the summer. Ray Pavlak, a former county agent, who heads this enterprising firm, issued a special bulletin after the first hay crop in which he said, "As the first crop of hay is very short this year every farmer will need to top dress most of his new and old alfalfa seedings. Use boron with fertilizer at least once during the

(Turn to ADVERTISING, page 15)

**Trace Elements
on your low land
are mighty important
for a good corn crop!**

We will make a special mixture for you . . . two pounds of Copper Oxide and ten pounds of Zinc Sulphate added to your fertilizer on low land is good insurance . . . try some this year.

**We Have Plenty of Fertilizer
to supply your needs**

DAIRYLAND FERTILIZERS Inc.
Phone 5-2621 Marshall, Wis.

**"Plow Down" for
CORN**

**Your corn plants get hungry,
too!**

**Give them a full meal of
plant food!**

The prescription for hungry corn plants:

1. Plow down 300 to 500 lbs. of 12-12-12 per acre (our bulk spreading service can save you money and time).
2. Use a minimum of 200 lbs. of 6-24-12, 5-20-20 or 6-24-24 with the corn planter. Place two inches below and to the side of the corn kernels.

The above recommendations are for general use . . . for maximum savings on your own farm . . .
TEST YOUR SOIL! We provide free soil testing service.

**Dairyland
Fertilizers, Inc.**

See Us for High Water Soluble
Phosphate Granular Big D Fertilizer

Phone 5-2621

Marshall, Wis.

**HAVE YOU SEEN YOUR
BANKER LATELY?**

**DO YOU KNOW
how much corn your
land will produce?**

**CAN YOU GROW
200 bu. of corn per acre
on your farm?**

**If you say "NO" --
Have You Really Tried It!**

Farmers who raise 150 or more bu. of corn per acre are doing it because they are following the University of Wisconsin Pacemakers recommendations.

Why not try raising 150 to 200 bu. of corn on your farm this year.

Sure . . . it takes money to buy fertilizer, seed and chemicals! Go to see your banker and tell him what your plan is. It will pay you to borrow money to buy fertilizer. Where else can you double or triple your money in six months?

**WE OFFER FREE SOIL TESTING SERVICE
TO OUR PATRONS**

**Come In and See Us
We Have High Water Soluble
Phosphate Granular Fertilizer**

DAIRYLAND FERTILIZERS Inc.
Phone 5-2621 Marshall, Wis.

**Get Your Fertilizer NOW!
Avoid the Big Rush!**

If you are going to use bagged fertilizer this year — don't wait until planting time to get your fertilizer . . .

HAUL IT OUT NOW!

At least haul out enough so that you won't be delayed in starting to plant your corn.

**DON'T FORGET . . .
that Plow Down Fertilizers
follow the Univ. of Wis. soil
test recommendations.**

We provide free soil testing service to our patrons

**REMEMBER . . .
You can get \$3.00 to \$5.00
return for each dollar you
spend for fertilizer.**

**SURE IT COSTS MONEY!
GO SEE YOUR BANKER . . .
That's Why He's in Business**

Some farmers are band spraying 1 1/3 lbs. of 50% Wettable Simazin in 12-inch bands over the corn rows at planting time to kill all weeds. We have a limited supply at \$3.80 per pound in 50-pound drums — \$4.25 per pound in 5-pound bags.

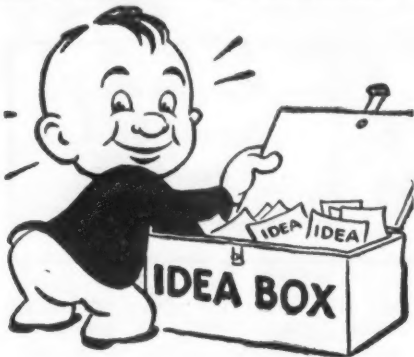
**See Us for Your Fertilizer Needs
SAVE MONEY . . .
Buy BIG D This Year**

DAIRYLAND FERTILIZERS Inc.
Phone 5-2621 Marshall, Wis.

★ ★ ★

★ ★ ★

SUCCESSFUL ADVERTISEMENTS—The newspaper advertisements appearing here were unusually successful in the past spring in getting business for Dairyland Fertilizers, Inc., Marshall, Wis. The advertisements are informative and some quote authorities to help convince farmers of value of certain practices. Dairyland Fertilizers is a large-scale and consistent newspaper advertiser the year around.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 7181—Steel Buildings in Color

Complete details about a pre-engineered steel building in color, using a new vinyl-aluminum protective coating, are contained in a brochure entitled "Stran-Steel Buildings in Factory-Applied Stran-Satin Color." Buildings are being offered in color coatings of blue, green, bronze, rose gray and white, as well as in the standard metal finish. The brochure may be secured by checking No. 7181 on the coupon and mailing it to this publication.

No. 6796—Rubber-Lined Tanks

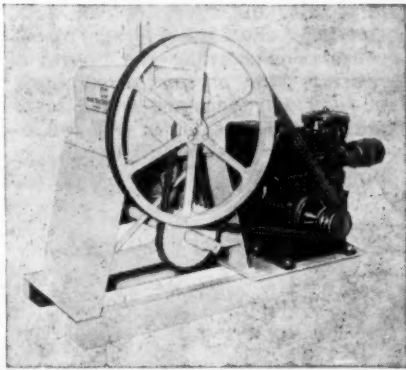
Ranging in size from 55 gal. up to 12,000 gal., rubber-lined steel tanks are now available in 15 different stock sizes for quick delivery to fertilizer users. Abrasion & Corrosion Engineering Co.—fabricators of rubber-lined steel equipment for agriculture and industry—specializes in producing fertilizer tanks of all types, including applicator tanks, skid-type nurse tanks, and storage tanks. For tank types and sizes not included in their regular stock, A & C is geared to provide custom fabrication to required specifications, with delivery to any location. Check No. 6796 on the coupon and mail to secure details.

No. 6794—Vermiculite Folders

Applications and chemical and physical properties of vermiculite are presented in booklets issued recently by the Zonolite Co. The product's applications as a carrier for agricultural chemicals—insecticides, fungicides, weedicides—and as a conditioner for fertilizer are described. Contents of the booklets include also vermiculite's general characteristics, particle sizes, chemical composition, pH and buffering capacity and many other similar subjects. A complete listing of uses in modern industry is also included. Check No. 6794 on the coupon and mail it to Croplife to secure the booklets.

No. 7116—"2-in-1" Hydraulic Unit

M&W Tractor Products has announced production of a portable combination speed jack and hydraulic control. The hydraulic unit with 15 ft. of high pressure hose will dump most wagon loads in less than a minute. Speed reduction for elevating and other uses is provided by a roller chain-sprocket unit delivering 3.5 to 1 reduction. Skid-mounted models are available for gasoline engine (5 to 7½ h.p.), electric motor (3 h.p.) or tractor PTO power application. The



hydraulic pump will deliver 2,500 lb. pressure, adequate to raise 100 to 150-bu. grainloads. A positive, three-position valve controls raising, holding and lowering. Hydraulic fluid reservoir capacity is 15 qt. For more information and literature, check No. 7116 on the coupon and mail it to Croplife.

No. 6798—Fertilizer Bag Design

The Pelham Phosphate Co. recently adopted a new package design for its complete line of fertilizer products. Two packages, illustrating both the old and new designs, are shown here. The new package design shown at the right was created by Union



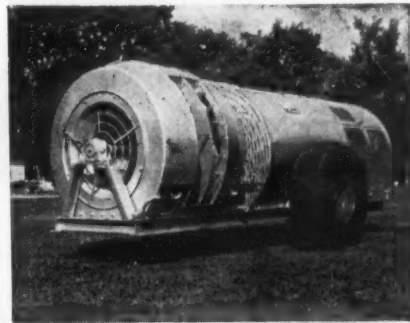
Bag-Camp Paper Corp. The more liberal use of color gives the new package better attention value and impact. In addition, the new design gives product and analysis information on both ends of the bag as well as in the gussets. Secure details by checking No. 6798 on the coupon.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6789—Orchard Air Sprayer

A new line of orchard air sprayers, designed to handle spraying needs of both small and large orchards and groves, has been introduced by the F. E. Myers & Bro. Co. The new line,



offered in a 224 series and 232 series (pictured) has been field tested in application of dilute, semi-concentrate and concentrate chemicals for control of fruit pests, insects and diseases, without sacrifice to tree vigor or fruit finish. The sprayers have been designed for uniform application of all chemical solutions presently used in orchard and grove spraying. Even highly corrosive spray chemicals can be applied without damage to the sprayer, because of special manufacturing processes, it is claimed. The new sprayer line consists of five basic units, with many interchangeable parts to minimize service and replacement requirements. The 224 series air sprayer has been designed to give the advantages of air spraying to growers with small or medium-sized orchards and groves. The sprayer can be used to apply concentrate and semi-concentrate spray materials. The 224 series is available in either 300- or 400-gal. tank sizes. It features a high pressure 20-gal. a minute pump with a 400-lb. operating pressure. The material is distributed by a direct drive fan. Secure details by checking No. 6789 on the coupon and mailing it to Croplife.

No. 6790—Coding Wheel

A new addition to Mill Engineering Company's line of tag dispensing and coding equipment is the "Quick Change Coding Wheel." The change is accomplished by metal code holders into which are placed the logotype. The new coding wheel contains three holders for the metal strips, thereby making it possible to print three types of information simultaneously. The bag tagger automatically dispenses the tag into the sewing machine for each bag and the coder accessory prints code and other information on the tag simultaneously. Full information will be supplied to those interested. Check No. 6790 on the coupon and mail it.

No. 6793—Pipe

"Fibercast" line pipe and well tubing are now being produced in 4½ in. O.D. size, according to an announcement by the Fibercast Corp. "Fibercast" is a non-corrosive pipe made from thermosetting reinforced epoxy resins, producing a pipe that takes high operating pressures and temperatures, yet being 4½ times lighter than steel, the company claims. Its officials state: "After several years of extensive and vigorous field tests, Fibercast was introduced in 1953 in sizes of 2½ in., 2¾ in. and 3½ in. Its successful applications in the petroleum, chemical, paper and fertilizer industries—particularly where severe corrosive conditions exist—brought about the demand for the larger 4½-in. size." Secure details by checking No. 6793 on the coupon and mailing it to Croplife.

No. 7143—Belt Conveyor Bag Closer

The Dave Fischbein Co. has announced the introduction of a new belt conveyor sewing unit, the "Fischbein Bag Closer model B-5." The unit operates from one 110-volt light outlet. No special wiring is necessary. The two-stage switch operation is controlled by foot pressure by the operator. The first stage starts the movement of the conveyor belt to carry the bag to the sewing head,

Send me information on the items marked:

- | | |
|--|--|
| <input type="checkbox"/> No. 6785—Crop Dusting | <input type="checkbox"/> No. 6796—Rubber-lined Tanks |
| <input type="checkbox"/> No. 6787—Spreader-Activator | <input type="checkbox"/> No. 6798—Bag Design |
| <input type="checkbox"/> No. 6788—Hand Sprayer | <input type="checkbox"/> No. 7111—Checkweigher |
| <input type="checkbox"/> No. 6789—Orchard Sprayer | <input type="checkbox"/> No. 7116—Hydraulic Unit |
| <input type="checkbox"/> No. 6790—Coding Wheel | <input type="checkbox"/> No. 7124—Batching Scale |
| <input type="checkbox"/> No. 6791—Fertilizer Bagging | <input type="checkbox"/> No. 7143—Bag Closer |
| <input type="checkbox"/> No. 6792—Adjuvant | <input type="checkbox"/> No. 7145—Hoist Carrier |
| <input type="checkbox"/> No. 6793—Pipe | <input type="checkbox"/> No. 7152—Settler |
| <input type="checkbox"/> No. 6794—Vermiculite | <input type="checkbox"/> No. 7181—Steel Buildings |

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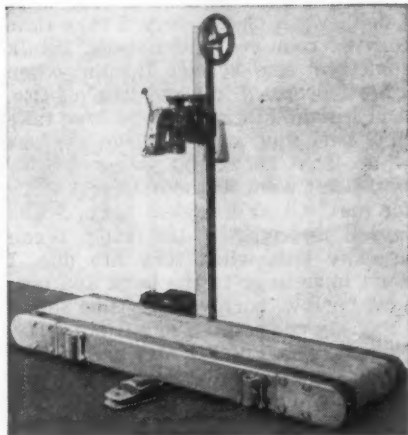
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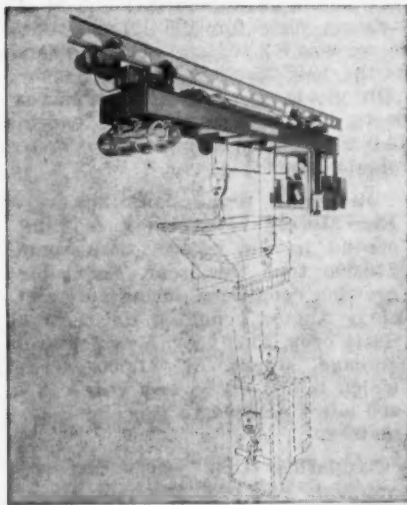
and the second stage starts the sewing operation. The machine stitches at the rate of 30 ft. per minute. Check No. 7143 on the coupon the mail to secure details.

No. 6785—Crop Dusting Brochure

Transland Aircraft, division of Hi-Shear Rivet Tool Co., is making available an eight-page brochure and describes the new "Swathmaster" for crop dusting and spraying aircraft. The "Swathmaster" is claimed to be the only dispensing unit available for the aerial application of both dry and liquid materials to farm and forest lands. Fully illustrated, the brochure explains the economic advantages, flight and application performance, suitable aircraft, how it works and installation details. A copy of the brochure may be secured by checking No. 6785 on the coupon and mailing it to Croplife.

No. 7145—Hoist Carrier

A cab-controlled twin-hook hoist carrier provided with an auxiliary hoist for dumping has been built by the Cleveland Tramrail Division, the Cleveland Crane & Engineering Co. Of weatherproof construction for outdoor service, the unit will pick up



tote boxes of materials, haul them and empty by tipping. While the carrier was especially designed for handling slag in a steel mill, it is suitable for various bulk materials. Check No. 7145 on the coupon and mail it to this publication.

No. 6788—Hand Sprayer Literature

The B & G Co. has produced a descriptive folder and price folder for its hand sprayers. Sprayers from the ½-gal. size on up to the 2-gal. size are described. Various accessories such as nozzles, tip assemblies, valves, pump units, carrying straps and repair boxes are also described. Check No. 6788 on the coupon and mail it to secure details.

No. 6791—Fertilizer Bagging, Shipping

A new bulletin covering fertilizer bagging and shipping equipment has been prepared by the K. E. Savage Co. The bulletin explains and illustrates a shipping mill for bagging

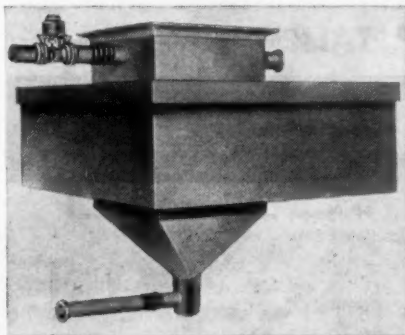
large volumes of fertilizer, a sewing machine stand, horizontal and inclined belt conveyors, truck loading conveyors, and industrial design information. The bulletin may be secured by checking No. 6791 on the coupon and mailing it to Croplife.

No. 6792—Adjuvant Activity

A leaflet titled "Adjuvant Activity in the Agricultural Chemical Field" has been prepared by Colloidal Products Corp. The leaflet describes Kelthane (Colloidal X-77—Colloidal Z-1). Results of field investigations are presented in the leaflet. Secure it by checking No. 6792 on the coupon and mailing it to Croplife.

No. 7124—Batching Scale

A constant feed-batching scale which utilizes an electronic closed circuit control has been announced by Thayer Scale Co. The company announcement said the electronic control provides dynamic accuracies without a dead spot and claims final accuracies of 0.1% for wet or dry materials being fed at rates of from 5 lb. to 5 tons per hour. No mechanical parts subject to wear are found in the control system. The closed loop



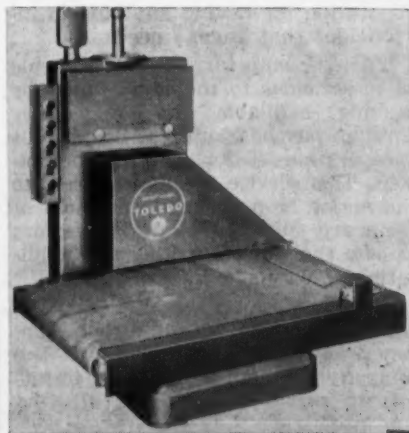
system will maintain constant speed control over a long period of time, the announcement said. Feeders are available to handle viscous or lumpy material, and by substituting a controlled orifice valve for the dry feeder, liquids can be weighed. For more information, check No. 7124 on the coupon and mail it to Croplife.

No. 6787—Spreader-Activator

A folder titled "Colloidal X-77 Spreader-Activator" for use with herbicides, insecticides, fungicides and acaricides has been published by the Colloidal Products Corp. Colloidal X-77 is water soluble and the folder lists its characteristics which make it suitable for various farm chemicals. Check No. 6787 on the coupon and mail it to secure the folder.

No. 7111—Automatic Checkweigher

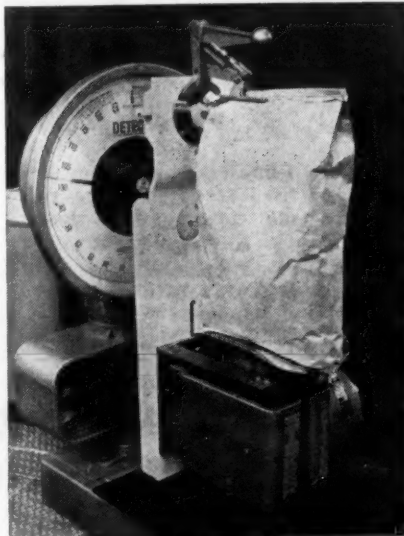
A new higher capacity "Toledo" automatic checkweigher, designed to govern uniformity and control costs by maintaining a constant check of items passing over the unit, has been announced by Toledo Scale, Division of Toledo Scale Corp. The unit, identified as a model 9460, is capable of handling packages or bags weighing between 25 lb. and 200 lb., with an accuracy of .1%, it is claimed.



Equipped with a belt-type motorized conveyor weigh section, items pass over the unit at a rate of approximately 20 per minute and are checked "on the run" against a predetermined weight. Check No. 7111 on the coupon and mail it to secure details.

No. 7152—Settler Packer Attachment

An attachment for bag packers which is designed to settle material in the bag during the entire filling cycle without affecting the weighing mechanism of the packer has been announced by the H. L. Stoker Co. The model "B" settler features adjustments to control the intensity and frequency of the settling action to



meet the physical characteristics of most packaged materials. It can be installed on all models of Stoker packers and, with slight modifications, may be adapted to most other makes of packer now in service. Further information is available by checking No. 7152 on the coupon.

New Fertilizer Plant To Open in Michigan

NILES, MICH.—Formation of the Michiana Chemical Co. here has been announced. It will manufacture and distribute fertilizers to dealers in southwestern Michigan and northern Indiana. Officers and directors of the company are F. J. Thar of Benton Harbor, director; Alf H. Oines, formerly of Hartford, president; and Robert W. Freske, Chicago, vice president and general sales manager. The plant and office is located at the New York Central yards in Niles. Bruce Construction Co. of Niles is building the plant and installing equipment, including ammoniation facilities.

The company expects to be in operation by early September, having mixed fertilizers and other fertilizer materials ready for shipment in both bulk and in bags. The plant will have a capacity of about 20,000 tons of mixed fertilizers annually which will be sold under the brand name of Spartan Brand Plant Food.

Former President of Smith Agricultural Chemical Dies

COLUMBUS, OHIO—John E. Powell, 69, chairman of the board of the Smith Agricultural Chemical Co., died recently at Petoskey, Mich. where he maintained a summer home.

Mr. Powell had spent nearly all of his business life at Smith, having started with the firm in 1905 as a water boy and working his way up to the presidency in 1944. He retired from this position in 1955, but remained as chairman of the board of directors.

JOINS STAUFFER

NEW YORK—Calvin W. Roberts has joined the industrial sales department of Stauffer Chemical Co. as field salesman. He will be located in the Philadelphia area.

Gloomicides

They had been married for almost five years but he was still extremely jealous: "It's outrageous! Every time you see a handsome man you forget that you're married!"

"On the contrary, my dear . . . That's when I remember it especially."

★

The cab driver looked disappointed when the Scot handed him the exact fare. "That's correct, ain't it?" queried the Scot. "Yes, it's correct," answered the caddy, "but it ain't right!"

★

A terribly jealous woman used to submit her husband to a regular inspection every evening. The slightest hair discovered on his coat would lead to the most frightful of scenes.

One night, finding nothing at all, she burst into tears and wept: "Even bald women, now!"

★

Two little boys, in from the country for a visit to their grandmother, wandered down the street to inspect the brand-new school that was just being finished. They found two electricians working in one of the rooms. "Whatcha doin'?" inquired one of the little visitors.

"We're just putting in the new electric switches, sonny," replied one of the workmen.

"Gosh," said the other boy, after a pause, "I'm sure glad we still got our old country school."

★

The wedding ceremony was at an end. The bride dabbed at her pretty eyes with a filmy handkerchief. One of the bridesmaids was also affected to tears. "Why do you weep?" asked a gentleman guest. "It's not your wedding."

The girl looked at him scornfully. "That's the reason!" she snapped.

★

Two friends met for the first time in years. "How are things?" one asked.

"I had a bad year last year," answered his friend. "My factory burned down, and I wasn't insured."

"That's too bad," the first man sympathized. "How is your wife?"

"Dead," came the unhappy reply. "Run over by a bus in December."

"I'm sorry to hear that. But how's the rest of the family?"

"My son got sent to jail."

"Gosh, that's tough. Then, desperately searching for a cheerful subject, "How are you doing yourself?"

"Great!" came the jovial answer. "Business is wonderful—I sell lucky charms, you know."

REMEMBER TO ORDER

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Rubber-lined Steel FERTILIZER TANKS

APPLICATOR SKID-TYPE NURSE STORAGE

- 15 different stock sizes
- 55 gals. to 12,000 gals.
- Immediate to 10-day delivery, lowest prices

ABRASION & CORROSION ENGINEERING COMPANY

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Doing Business With

Oscar & Pat



By AL P. NELSON
Croplife Special Writer

Phil Ambelang, a pudgy, red faced farmer came sauntering into the Schoenfeld & McGillicuddy salesroom that late summer morning. He greeted Tillie Mason who sat typing, and then moved over to the railing behind which stiff backed Oscar Schoenfeld sat sorting papers.

"Hello, Oscar, old boy," he said. "Gettin' rich sellin' fertilizer?"

Oscar frowned. He hated to joke with people. Small talk was not for him. He detested the American habit of cracking jokes about so many things.

"Making money!" he echoed. "This is the worst business in the worldt. We got small margins, people don't pay their bills. Some customers want the worldt with a fence aroundt it. Next thing you know they will want us to plow their farms, too."

"Yeah, that's terrible," commiserated Ambelang, with a grin. "If things keep getting worse you'll have trouble keeping that pot of yours where it is."

Oscar flushed. He resented personal remarks like this, too. "What's the matter with my stomach?" he said. "I like it."

"I like mine, too," said Ambelang, patting a generous expanse under his faded overalls. "When things get tough, I just look at my pot and tell myself, well I'm gettin' my share, so why worry. But when a feller's got a pot, just like when he's baldheaded, he's gotta expect to get kidded. The minute you get important about havin' something the other fellow ain't got he gets jealous and starts makin' wise cracks."

Oscar's Teutonic, orderly mind could not fathom this reasoning. Why a man should feel important being baldheaded was something he did not understand. But a pot belly—that was a little different. Oscar always thought it made a man look distinctive. Most bankers he knew had pots. When Oscar developed his pot, more than 15 years ago, he had begun to feel very important.

"Well," continued Ambelang, "you can tell Pat that I've decided I'll put a spray outfit in his parade. Ma says I'd better do it. Pat's done us a lot of favors."

"Parade!" echoed Oscar. "What parade?"

Ambelang look surprised. "You mean you don't know about it? I mean the parade you and Pat are going to stage during Fair Day. Pat told me he's gonna put your two bulk spreaders in the parade, your other delivery trucks and then about ten farmers pulling their sprayers, the ones we bought from you guys and you got rich on."

"We don't get rich on noddink aroundt here," Oscar snapped, his cheeks flushing. "Expense! Expense! Expense! That's all we got. Now a parade. Himmel, we got a big display booth at that Fair and now a parade!"

"Well, it won't cost too much, when you consider all the farmers that'll be watchin' your own special parade," went on Ambelang. "Pat's only payin' the ten of us \$5 each."

"\$5 each!" cried Oscar. "Ach, does Pat think the government owns half of our business? \$50 for farmers in the parade! \$75 for the booth! \$80 for a full page adt in the paper. More money for booth decorations, signs and other junk! We'll go bankrupt. Himmel!"

"I don't think so," Phil Ambelang

said slowly, enjoying Oscar's discomfiture. "I don't see your name or Pat's on the relief rolls. You must have a few shekels salted away. Maybe lots of them. 'Course Pat's got lots of kids. So maybe you got more shekels than he has. Bankrupt. I don't think so, Oscar."

"Well, if I have a few shekels it's because I work hardt and save!" Oscar growled. "Why work hardt to get a lot of sales and then add up and find you didn't make any profit? Ach, I haf seen many business men wake up after a jag like that. I like to know where I am at."

"Yeah, I know just how you feel, Oscar. I used to be just like you. All I could think of was work, work, work. Never seemed to get enough of it. I never took time out to relax or play a little. Then you know what happened?"

"You was schmart," Oscar said.

"You worked while the other fellers sat on their—on their—cabbages."

"No, I wasn't smart. First thing I knew I was getting mad at everybody. I talked sharp to my wife. I scolded the kids. Me and my mother-in-law had an awful scrap and she wouldn't bake gooseberry pies for me anymore. And I was dissatisfied with myself. I wasn't happy."

"Ach, that's the trouble with so many people today," Oscar said. "They think they are entitled to have it easy. They think you don't haf to work hardt and safe. The worldt owes them a million dollars without workin'. Life is tough. Ach, I foundt that out. When you get oldt nobody will take care of you but yourself. Geld in the bank. That's nice to haf. And you can't haf it if your throw money aroundt foolishly, like Pat."

"I feel sorry for you, Oscar," said Ambelang. "You'd better change. I changed. Now I take it a little easy."

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

"We don't claim to know all there is to know about plant diseases and insects in our area," admits D. T. Fordham, manager of the Jim C. Locke Co., Wharton, Texas, "but what we don't know, we find out from an authority who does know. And we utilize this knowledge to the fullest extent to see that customers get the insecticides needed for a specific job."

As a result of this policy, plus sound merchandising ideas, the company has built its insecticide business to about \$75,000 a year.

Wharton is in a rich farming and ranching area, with pecans, cotton and rice supplying the major production. Mr. Fordham has made a special point of studying everything he can obtain on diseases and insects that attack these three plants. And it has paid the customer as well as the company.

For example, when pecan orchard owners ask for certain sprays, Mr. Fordham asks them why they are spraying. If they are not certain, he insists on going out and looking at the orchard before he recommends a product.

Mr. Fordham finds that many pecan trees are infested with scale and scab, but comparatively few orchardists recognize them. All they know is that yield has been poor and they reason that they ought to spray. If the trouble is "unknown," Mr. Fordham finds that in most cases the trouble is scab or scale, and he recommends the sprays that will counteract them.

When Mr. Fordham encounters a disease in pecan trees, cotton, or rice that is somewhat questionable to him, he calls on one or more experts with whom he works in the area. He utilizes the services of the county agent, the entomologists of Texas A&M College extension service and those of manufacturers.

Mr. Fordham takes one or more of these specialists out to the affected crop or orchard and together they make a thorough examination. Only after that does he recommend an insecticide to eliminate the trouble.

Although farm crops and orchards create the bulk of the company's insecticide business, Mr. Fordham does not overlook the small operator—the farmer with a hundred chickens or a pen of hogs, or the small rancher. They are good insecticide customers and he has found that by having built a reputation of service to the pecan grower and the rice and cotton farm-

er as well, he naturally gets a sizable share of the business from the small buyers.

Mr. Fordham further stimulates this type of business through two outstanding displays of insecticides in his modern store. One display consists mainly of products for plants and crops, the other for animals. Each occupies a different section of the store and both are so arranged that the average feed and seed customer sees one or both displays before he makes his purchase and leaves the store.

"We try to stock everything that growers in this area need," Mr. Fordham stresses. "We try to keep ahead of demand. When there is a hint of any new infestation in our county, we have the insecticides to counteract it even before the demand hits us."

Mr. Fordham admits that such a policy reduces stock turnover somewhat but it more than justifies itself by helping to further the company's reputation for having anything in insecticides that anyone needs.

The company further aids the sale of insecticides to the small buyer by making available to him, either through purchase or rent, the various sprayers needed for applying the poisons. This service has little appeal to the major crop growers, for most of them are sufficiently large operators to own their own spraying and applying equipment.

The spray rental service has a special appeal also to the urban gardener and small farmer, which the company does not overlook in its effort to serve the needs of all who buy insecticides.

I don't work on Sundays. I take time to visit relatives and friends. I talk somethin' else besides farmin' when I meet people. I kid and joke a little. And I make more friends. I even take in a burlesque show once in a great while. That keeps you young, too."

"I don't want anybody to feel sorry for me!" Oscar growled. "Ach, I like myself and what I am doing. I can pay my bills when they are due. I don't have to go to the bank and borrow, borrow, borrow everytime something big comes up. I'm sittin' pretty. Nobody else I know sits pretty like me. I know what the score is. I know plenty of dumbkops that don't."

Phil Ambelang sighed. "Oscar, you are in bad shape. Even our minister couldn't help you, I don't think. But I am going to make a try. By golly, the next time I go to a burlesque show, I am going to take you and foot all expenses. I want to loosen you up."

"I won't go!" Oscar said. "I won't go. I wouldn't waste the time. Ach, I wouldt be up too late anyway. I always go to bedt at 10 o'clock. That's why I am first on the job early every mornin' when Pat sleeps. I am Johnny on the spot to get things going. That's what I like."

New Jersey Tomato Crop May Surpass Old Record, Authorities Indicate

TRENTON, N.J.—Prospects look good for New Jersey tomato growers as they continue harvesting what is expected to be their highest tomato yield on record, 13 tons an acre. This high yield, forecast by the New Jersey Crop Reporting Service, was indicated by the condition of the tomato crop on Aug. 1.

The New Jersey Crop Reporting Service also noted that with this high indicated yield, Garden State tomato production this year will be the second largest in the nation. Only California will surpass the New Jersey production of processing tomatoes.

Preliminary acreage figures place New Jersey's expected yield at 13 tons an acre for 1958. Last year's figure was 8.2 tons an acre, the same as the 1947-56 average yield.

In yields per acre, California expects 17.5 tons and Illinois expects 14.0 tons an acre in their processing tomato crops this year.

In total production, however, New Jersey is expected to rank second in the nation, with some 279,500 tons this year. Favorable growing conditions during July and early August benefited the Garden State crop. This year, New Jersey's acreage stands at 21,500 acres which is 500 above last year's 21,000 acres planted to processing tomatoes.

Comparing this year's expected high yield and production of 279,500 tons gives a vivid contrast to the 1957 drouth year production of 172,200 tons.

Nationally, the Crop Reporting Service notes that indicated production of tomatoes for processing in 1958 is 4,254,400 tons. This Aug. 1 indicated production is almost one-third larger than last year's crop and the average annual production for the preceding 10 years. If the expected production is realized, the 1958 crop across the country will be only 8 percent below the record large 1956 crop.

PROCESS CHEMICALS DEPT.

NEW YORK — Formation of a process chemicals department by the industrial chemicals division of American Cyanamid Co. has been announced by G. W. Russell, division general manager.

The new department, created through the merger of the company's heavy chemicals and manufacturers' chemicals departments, will service the wide range of industry's chemical needs with an extensive line of intermediate, heavy and specialty chemicals for the process industries.



FARM SERVICE DATA

Extension Station Reports

Many Georgia farmers are failing to get top yields—and top profits—out of their crops because of inadequate potash fertilization, University of Georgia soil fertility scientists, Ralph L. Wehunt and H. D. Morris, warn.

Mr. Wehunt, a leader in Georgia's \$200 Million and Intensified Soil Fertility Programs, and Mr. Morris, call potash "one of the most limiting soil fertility factors in Georgia."

Mr. Wehunt and Mr. Morris explain the problem is "especially acute in the Coastal Plain area," where over 75% of thousands of soil samples collected in two of the Coastal Plain Provinces tested low in potash.

In an eight-year experiment in this area, potash fertilization increased the yield of all crops studied on a Norfolk sand loam soil, a major agricultural soil widely distributed and closely associated with several other important soils in Georgia.

During the experiment, they explain, the beneficial influence of potash was much more marked during the last four years than during the first four years.

And one application of 120 lb. of potash per acre to a critically low potash soil increased corn yields by 54 bu. an acre over a no potash treatment—with an estimated return of \$10 for every \$1 spent for potash.

The average South Georgia farmer just does not apply enough potash to correct the low potash soil conditions under which he is farming, the Georgia scientists contend.

To correct his critically low potash soils, the farmer should broadcast at least 100 to 200 lb. of potash per acre and then follow state fertilizer recommendations through soil tests.

It takes only two to three years of cropping without adequate potash to reduce the potassium level of Norfolk soil to a point where most crops cannot be produced profitably, the University of Georgia agronomists say.

★

Oklahoma agricultural experiment station trials indicate that gross returns from Oklahoma's small grain winter pastures can be increased \$5 million annually by a two-fold plan of irrigation and rotation grazing.

In a two-year study, beef gains where irrigation and rotation grazing were practiced averaged 531 pounds per acre for a 175-day period. This was 64 lb. more than the 467 lb. of beef per acre produced on pastures where irrigation was used without rotation grazing.

Under a program of continuous grazing and no irrigation, small grain winter pastures produced only 220 lb. of beef per acre during the 175 days.

In another part of the same study, Elbon rye, an early forage producer, carried 50% more animals than Balbo rye, a late forage producer, during December, January, and February. However, Balbo rye carried more animals during March, April, and May. Total gain on each pasture was the same over the entire winter and spring period.

A more recent study indicates that winter oats and Elbon rye make an even better grazing combination than the two rye varieties.

★

To permit greater precision in evaluating soil testing methods as reliable indicators of fertilizer nutrient needs for crops, soil scientists

with the Arkansas Agricultural Experiment Station conducted tests on cotton fields of cooperating farmers in southwestern and eastern Arkansas.

The tests are attempts to compare soil test results with crop response when recommended fertilizer nutrients are added. The tests are supervised by the Soil Testing and Research Laboratory at Fayetteville, and the Eastern Arkansas Soil Testing and Research Laboratory at Marianna.

Here are some highlights of the

fertilization and soil test studies on cotton as summarized by Richard Maples and Dr. R. L. Beacher:

Nitrogen fertilization alone increased cotton yields by 20 to nearly 700 lb. of seed cotton per acre on 23 of 26 farms checked during 1953-55. The nitrogen fertilizer rates varied from 40 to 140 lb. actual nitrogen an acre.

Phosphorus fertilizer applications of 30 to 100 lb. of phosphate an acre, along with nitrogen or nitrogen and potash, boosted yields by 14 to nearly 450 pounds of seed cotton an acre in some fields.

Forty to 100 lb. of potash fertilizer spurred yield increases on 21 farms. The increase was 600 lb. of seed cotton an acre at one test location.

Soil tests for pH, organic matter, available phosphorus, exchangeable potassium, and exchangeable magnesium were made on composite sam-

ples from all test sites before treatment.

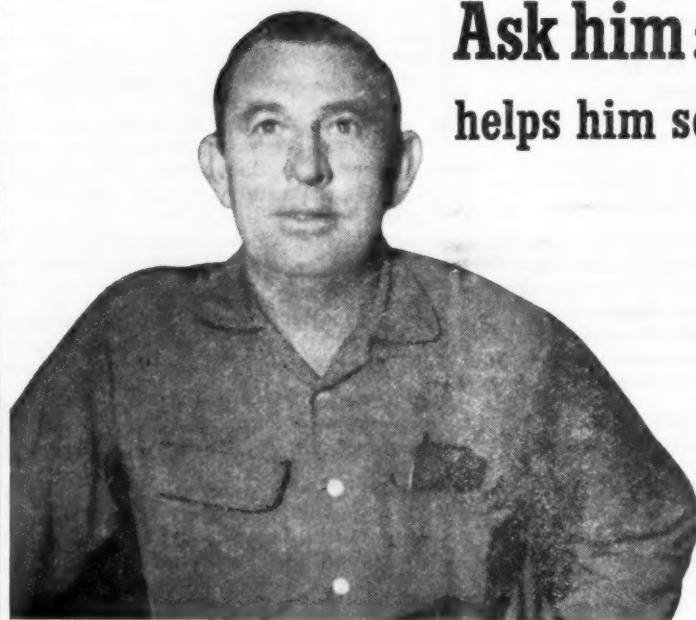
Additional studies are underway to refine nutrient testing methods and their interpretation.

★

Irrigating tobacco to maintain as nearly as possible ideal soil moisture levels throughout the period of rapid growth increases yields more than enough to justify the cost, according to U.S. Department of Agriculture and state scientists.

A seven-year cooperative study in Florida, Georgia, North Carolina, and Virginia has shown that irrigating tobacco should be highly profitable in seven out of 10 years.

Tests conducted at the Georgia Coastal Plain Experiment Station, Tifton, are good examples. These tests showed an average annual yield increase of 254 lb. per acre of irri-

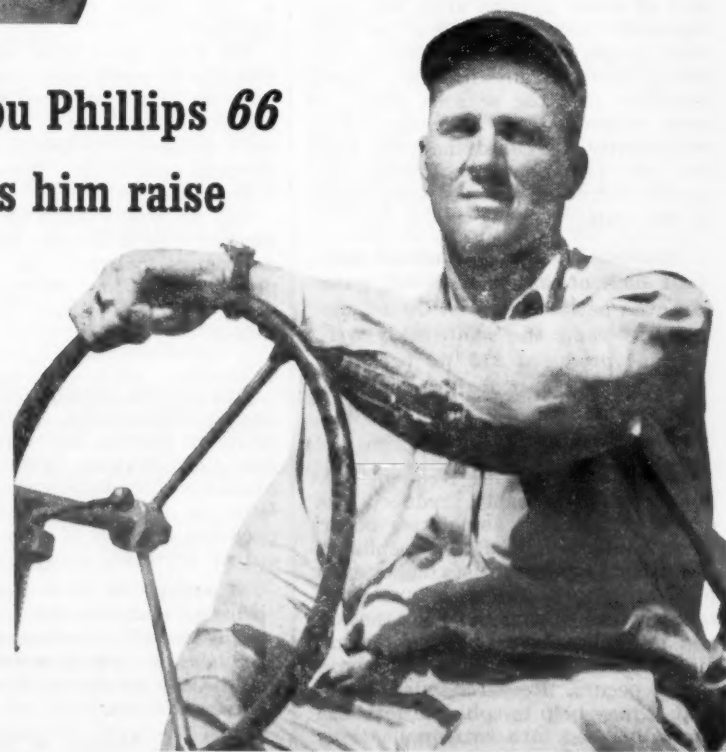


Ask him: he'll tell you Phillips Service helps him sell more fertilizer

Clarence Osterbuhr, president of Anamo Co., Inc., Garden City, Kans., says: "I like to sell Phillips 66 Ammonium Nitrate because it's a first class product. But I also like Phillips service. Not only does my Phillips field man help me in many ways, but I can depend on the full resources of Phillips service, if I need them." Mr. Osterbuhr is just one of many dealers who find that the combination of a top quality product and Phillips service helps them make more sales and greater profits.

Ask him: he'll tell you Phillips 66 Ammonium Nitrate helps him raise better crops

Frank Wise, who farms 960 acres near Dimmitt, Tex., says: "I like the way Phillips 66 Ammonium Nitrate stores and spreads. Nothing discourages a farmer more than to discover fertilizer skips when his crop starts coming on. Phillips 66 Ammonium Nitrate spreads evenly, and gives me a more uniform crop response." Word-of-mouth praise of Phillips 66 Ammonium Nitrate by satisfied users is making new customers for dealers everywhere. You, too, will find Phillips 66 Ammonium Nitrate and Phillips service a profitable combination.



Ask us: Get all the facts about Phillips 66 Service. Call or write:

PHILLIPS PETROLEUM COMPANY

Phillips Chemical Company, A Subsidiary, Bartlesville, Oklahoma

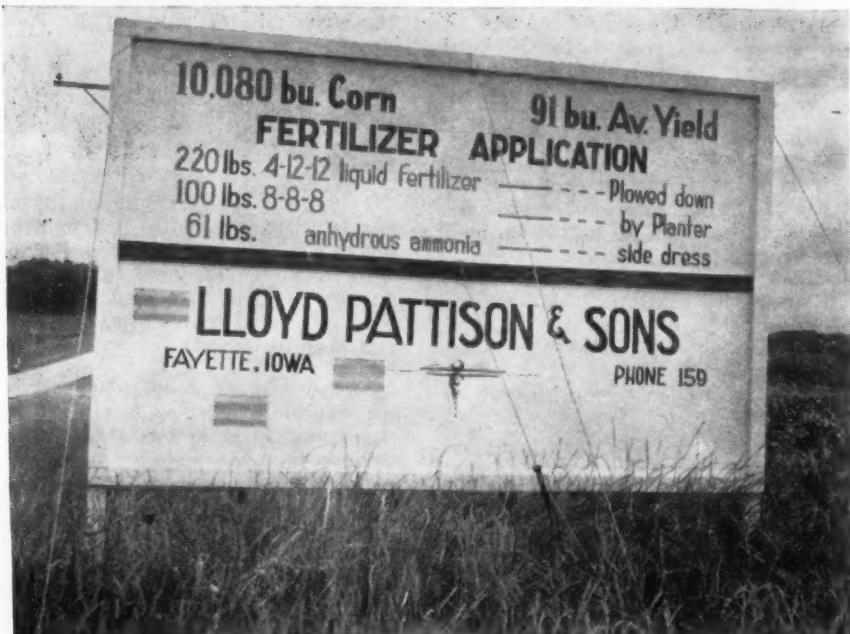
SALES OFFICES:

AMARILLO, TEX.—First Nat'l Bank Bldg.
ATLANTA, GA.—1428 West Peachtree Street,
Station "C" P. O. Box 7313
BARTLESVILLE, OKLA.—Adams Bldg.
CHICAGO, ILL.—7 South Dearborn St.
DENVER, COLO.—1375 Kearney St.
DES MOINES, IOWA.—6th Floor, Hubbell Bldg.

HOUSTON, TEX.—6910 Fannin Street
INDIANAPOLIS, IND.—3839 Meadows Drive
KANSAS CITY, MO.—201 E. Armour Blvd.
MINNEAPOLIS, MINN.—215 South 11th St.
NEW YORK, N.Y.—80 Broadway
OMAHA, NEB.—3212 Dodge St.
PASADENA, CALIF.—317 North Lake Ave.

RALEIGH, N. C.—401 Oberlin Road
SALT LAKE CITY, UTAH—68 South Main
SPOKANE, WASH.—521 East Sprague
ST. LOUIS, MO.—4251 Lindell Blvd.
TAMPA, FLA.—3737 Neptune St.
TULSA, OKLA.—1708 Ullico Square
WICHITA, KAN.—501 KFH Building





HIGHWAY SIGN SELLS—Many farmers travel highways to towns to do their buying, and that is one reason why effective highway signs can pay off for a fertilizer dealer. This sign by Lloyd Pattison & Sons, Fayette, Iowa, is posted on a farm where 10,080 bu. of corn were raised with a 91-bu. average yield. The fertilizer application is on the sign. This tells the fertilizer story and hundreds of farm people can see it when they drive by. Thus is the fertilizer story told effectively for many farmers to think about.

gated over nonirrigated tobacco. The annual gross income per acre increased by \$181.74. In four of the seven years, yields increased by more than 300 lb. of cured leaf per acre, and gross income increased by more than \$200 per acre. Of the seven years, only two reflected no benefit from irrigation.

Regular irrigations from the time the plants are knee high until mid-July gave the best yields and the best leaf quality. Frequent early irrigations (before the plants are knee high) tend to retard root growth and leach fertilizer beyond the shallow root zone.

Single weekly irrigations of $\frac{3}{4}$ to 1 inch of water applied after late May whenever there had been no rain (and proportionately less water following limited rainfall) were highly beneficial in those seasons when the crop responded to irrigation. This consistently increased the total yield and the yield of best grades, and usually increased the per-pound value of the crop.

Semiweekly applications of one-half inch of water, however, gave an even better response. On a four-year average, the semiweekly irrigations produced 215 lb. per acre more of the best leaf grades and 138 lb. more of the best smoking grades than weekly irrigations.

The plan for making frequent light applications probably reduced the overwatering that sometimes occurs when rain closely follows a substantial irrigation. Scientists believe the plan permits a better air-moisture-temperature environment in the soil and minimizes nitrogen leaching and also the drowning hazard that sometimes occurs. Research also shows that it may help to split the fertilizer normally used into two applications.

Some favorable changes have been noticed in irrigated tobacco—a slight reduction in nicotine content and a slower and usually longer burning rate.

All evidence currently available points to irrigation as economically sound. The odds are in favor of the farmer needing irrigation often enough to justify the investment in equipment where good water is plentiful.

★

It pays to use plenty of plant food on soils that have a high crop yielding potential, reports Dr. R. L. Cook, head of Michigan State University's soil science department.

Dr. Cook reports that soils are "predestined" to have a high produc-

tion potential, a medium potential or a low productive capacity.

"We know we can increase the yield rates of those soils for particular crops, within certain range, but not over the entire range," he says in a statement summarized by the Midwest Division of the National Plant Food Institute.

"We are recommending the use of more fertilizer on good soils than on less productive ones.

"Thus, if a soil has all the factors to set the stage for 150 bushels of corn per acre, it pays to use more nitrogen, phosphate and potash fertilizer to produce that yield, than on a soil which can grow only 90 bushels."

Dr. Cook says that soil tests can indicate to some extent what a soil's nutrient status may be. The soil test, however, won't tell what are the soil's physical conditions and its production possibilities beyond the nutrient situation.

"So we really have to know what the soil type is and the physical characteristics of the soil beyond the plant food status," he says. "But the nutrient status is very important, of course."

★

One of the all-time "best sellers" among Connecticut Agricultural Experiment Station bulletins—The Morgan Soil Testing System—is again available for distribution. The bulletin is a technical handbook on chemical analysis of soils. It has been out of print for several months.

A charge of \$1 a copy to cover printing costs is made for the bulletin, No. 541. Address requests to Publications, The Connecticut Agricultural Experiment Station, New Haven 4, Conn.

Dr. M. F. Morgan of the Connecticut Station began research in 1927 which led to exposition of his methods in five earlier bulletins, the first published in 1932. Dr. Morgan died in 1945 on the island of Leyte, Philippine Islands, while serving in the army. The current edition, a reprinting, is by H. A. Lunt, C. L. W. Swanson, and H. G. M. Jacobson, now or formerly of the Department of Soils at the station.

More than a third of the requests for this soil testing bulletin come from overseas, especially from Eire, the Netherlands, England, India, South and Central American countries, and Australia.

Color and turbidity charts, all-important in interpretation of soil tests by the Morgan system, are included in bulletin 541.

What's Been Happening?

This column, a review of news reported in *Croplife* in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Estimates for cotton and corn acreages for 1959 were made by the U.S. Department of Agriculture as follows: Cotton, more than 18 million acres, perhaps nearing 20 million acres. Corn will be planted in some 77.5 million acres, the estimate said.

Thomas R. Cox, American Cyanamid Co., was elected chairman of the Northeastern Research and Education Committee at its meeting on Aug. 22.

Production of ammonia in June, 1958, was below that of the same month of 1957, the Bureau of the Census reported. Comparative figures were 336,309 tons in June, 1958, and 348,158 tons the same month of the previous year.

USDA scientists discovered that the southern bean-mosaic virus or its infectious particles move from dead to living plant cells. This opens a new area for research in plant disease control.

A new chief forester for the National Plant Food Institute was named. He is Dr. Laurence C. Walker who took leave from the University of Georgia to take this special assignment.

The National Agricultural Chemicals Assn., through its executive secretary, Lea S. Hitchner, declared in a statement that the industry should not have to bear the cost of setting pesticide residue tolerances by the Food and Drug Administration, since the laws exist for the protection of the public and not for the benefit of pesticide manufacturers.

The Farm Bill, long-debated measure, was passed Aug. 18, awaiting the Presidential signature, considered certain. Despite wide predictions to the contrary, the bill did go through with only minor deviation from its version as passed by the Senate earlier.

The American Phytopathological Society met in Bloomington, Ind., to observe its 50th anniversary. Speakers told of possibilities for wider use of chemotherapeutants in the control of various plant diseases.

Spencer Chemical Co. announced a new line of non-pressure direct application solutions to its nitrogen products. Joe Tuning was named to coordinate the sales of anhydrous ammonia and solutions.

Fertilizer tonnages in California showed a considerable increase in the fiscal year 1957-58. Comparative total figures were 1,123,325 tons for 1957-58 as compared to 1,079,748 tons the previous fiscal year.

Yield estimates for the 1958 crop year were stepped up by the U.S. Department of Agriculture as of Aug. 1. Earlier estimates of crop production went by the board as a new look was taken. New records were set on some crops, and all were above average in volume.

The Canadian Agricultural Chemicals Assn. announced that Hon. Duff Roblin, Premier of Manitoba, will be a guest speaker on its program, along with representatives of manufacturing firms and others in the farm chemical field. The meeting was set for Sept. 15-17.

Conventioners at the 1958 Beltwide Cotton Mechanization Conference, Brownsville, Texas, were told that the use of herbicides and insecticides can enhance cotton growth and that such use brings added profits to growers by cutting unit costs of production.

That a "somewhat mixed" pattern of pesticide sales has existed throughout the 1958 season was observed by Melvin Goldberg, Pesticide Advisory Service, New York, in an article on Aug. 18. He said that price declines on some pesticides, exports, lack of demand for some products, and tight supply situations on others have made a confused picture.

Pesticide output for 1957 dipped some 10% below that of the previous year, according to a preliminary report by the U.S. Tariff commission. It said that production of pesticides and other organic agricultural chemicals amounted to some 512 million pounds.

Agronomists from all parts of the U.S. were in attendance at the annual meeting of the American Society of Agronomy at Purdue University, Lafayette, Ind., Aug. 4-8.

The Federal Food and Drug Administration said that it would raise the fee schedule for determination of pesticide residue levels as required under the terms of the Miller Amendment to the Food and Drug act.

The National Agricultural Chemicals Assn., Washington, D.C., announced that its annual fall meeting will be held at the Gen. Oglethorpe Hotel, Savannah, Ga. Oct. 29-31, instead of the Augusta, Ga. location as previously stated. The originally-set dates will remain the same, however.

Ketona Chemical Corp., Ketona, Ala., announced that it would expand its facilities for production of prilled ammonium nitrate and ammonium nitrate-limestone.

A. J. Schuler, president of the Welcome Agricultural Chemical Co., Welcome, Minn., died of a heart attack on Aug. 2.

The new farm bill, a victory for Ezra Taft Benson, secretary of agriculture, called for a new look at fertilizer and pesticide markets as a significant shift away from the parity concept loomed.

Charles M. Miller, former Monsanto Chemical Co. employee, was enjoined by the U.S. District Court in Salt Lake City from revealing any trade secrets and other information and data belonging to Monsanto. Now employed by Central Farmers Fertilizer Co., Mr. Miller had been accused of revealing trade secrets to his former employers.

A public relations panel discussion and an imposing list of speakers are on the program for the 25th anniversary meeting of the National Agricultural Chemicals Assn. scheduled to be held at Savannah, Ga., Oct. 29-31. The association announced the tentative program plans late in July.

ADVERTISING

(Continued from page 9)

rotation. We recommend 0-10-40B or 0-14-42.

"Much of the alfalfa in Wisconsin suffers from lack of available boron in the soil. Because of this yields are often low and winter killing is more severe. It costs only about 95¢ an acre to add boron to your top dressing fertilizer."

This is specific, localized copy of a seasonal nature that farmers can understand, and it got results in more sales.

Copy in another Dairyland ad says, "It takes money to make money. You must spend money to make money. When you spend money wisely you make money."

"Many farmers try to save money by feeding their corn crop only HALF A MEAL. Why not give your corn plant the WHOLE MEAL? We mix copper and zinc with your fertilizers for your low lands. Try out some on your muck or bottom land this year. . ."

Farmers can understand the "HALF A MEAL" and the "WHOLE MEAL" reference. It sticks in the mind.

In an ad concerning the dedication of the plant and quoting an authority, Dairyland used this copy: "Prof. Chapman at our dedication said, 'This is the time to top dress your pasture and hay land with 400 to 500 lb. of 12-12-12 per acre. You can get \$6 return in extra milk production for each dollar you spend for top dressing'."

It is always well to quote authorities in your ads when you can do so and when you have permission. There are many agronomy professors and county agents who write columns for newspapers about fertilization recommendations. The wise dealer can watch for these and quote them to good advantage. It is amazing how enthusiastic many county agents are about proper fertilization. Alert dealers should check with county agents in their areas to see how they feel on this score. Such dealers might get wonderful copy.

Also many experimental stations issue press releases on fertilizer experiments. The alert dealer can also make use of this copy in his fertilizer advertising to give it authenticity and scope.

I like a "plowdown for corn" ad which was also used by Dairyland Fertilizers, Inc.

The copy read, "Your corn plants get hungry, too. Give them a full meal of plant food."

"The prescription for hungry corn plants:

"1. Plow down 300 to 500 lb. of 12-12-12 per acre (our bulk spreading can save you time and money.)"

"2. Use a minimum of 200 lb. of 6-24-12, 5-20-20 or 6-24-24 with the corn planter. Place two inches below and to the side of the corn kernels."

"The above recommendations are for general use . . . for maximum savings on your own farm . . . TEST YOUR SOIL! We provide free soil testing service."

Here's another Dairyland Fertilizers ad that has some excellent points, "Don't forget that plow down fertilizers follow the University of Wisconsin soil test recommendations. We provide free soil testing service to our patrons."

"Remember . . . you can get \$3 to \$5 return for each dollar you spend on fertilizer."

"Sure, it costs money. Go see your banker. That's why he is in business."

And in a separate block of copy, "Some farmers are band spraying 1½ lb. of 50% wettable Simazin in 12-in. bands over the corn rows at planting time to kill all weeds. We have a limited supply at \$3.80 lb. in

50 lb. drums—\$4.25 lb. in 5-lb. bags . . ."

There are some good sales producing ideas in the information this ad gives to farmers.

Mr. Pavlak, president of the firm, also writes a weekly agricultural column for four weekly newspapers in his area. In this column he frequently mentions the proper use of fertilizer. His name is signed at the bottom of the column, but the name of his firm is not given. To do so would make this column an advertisement. The way it now appears the editors are glad to have such a weekly news letter from Mr. Pavlak, a former vocational ag school instructor and a county agent. The farmers know Mr. Pavlak and know with what business he is connected. Yet through such a column he is able to get interesting, profitable, farm fertilizer, feed and other information to farmers. It is excellent publicity for his firm.

Perhaps other fertilizer dealers could write an agricultural column like this, too, for their local paper. If the editor won't sponsor it as a public service feature, the dealer could still write it as his own ad and pay for it. In that case he could use his firm name, and his ad column would perhaps be different from his competitors.

Remember, it has often been said that people out of the news are soon forgotten by the public. This is also true of merchants who stop advertising, or who do not continually advertise their products and services.

Don't let farmers forget you, for this will lower your profits.

Advertise constantly, in the right mediums, and within a budget, and you will be keeping your clientele aware of what you can do to help them raise better crops.

Hybrid Corn on Display At Agronomy Field Day

URBANA, ILL.—Some new hybrid corn bred especially for high rate planting will be on display at agronomy day at the University of Illinois agronomy farm on Sept. 11.

D. E. Alexander, University corn breeder, reports these experimental high rate hybrids perform considerably better than normal hybrids when planted at the high rate of 24,000 plants an acre.

These new hybrids perform just as well as normal types when the latter are planted at the rate of 16,000 an acre. Mr. Alexander explains that Illinois farmers usually grow 12,000 to 16,000 plants per acre.

When weather conditions are ideal, farmers are most likely to get the highest yields with high planting rates, Mr. Alexander points out. These new hybrids can be planted at high rates without fear that adverse weather will penalize yields. In years when weather is unfavorable, farmers can expect the high rate hybrids to yield as well as the conventional types planted at more normal rates.

Dow Reports Reduction in Sales and Income for Year

MIDLAND, MICH. — The Dow Chemical Co. has reported sales of \$636,201,143 and earnings after taxes of \$46,059,181 for the fiscal year ended May 31. Both figures represented declines from the preceding year when adjusted for income of the Doebekmun Co. which became a part of the Dow organization during the year.

GIVEN 25-YEAR AWARDS

NORFOLK, VA.—Six employees of the Smith-Douglass Co. Norfolk plant were presented with Hamilton watches recently upon completion of 25 years of service for each.

What the Dealer Should Know About

Accounts Receivable Insurance

By ERNEST W. FAIR

There are many tools to business stability and security available to every dealer. Some fit his individual store operation; some do not. There are many with which he is acquainted only slightly. A further knowledge of their practical aspects is well worth acquiring. Such a business tool is accounts receivable insurance.

It is one of the little known types of coverage. It protects the dealer against loss resulting from his inability to collect accounts receivable when his books of record have been destroyed, lost or damaged.

This can be caused by fire (even a small one in just the right spot), floods, storms, wreckage during a burglary, violence during a strike, maliciousness on the part of employees or in countless other ways.

Such a policy insures him against all risks of loss or damage to his records of accounts receivable only when they are contained in the premises described in the policy. Any part of these account books removed for an overnight check by the dealer or his bookkeeper and destroyed will invalidate the policy; they must remain in the premises set down as part of the policy information.

Usually the policy will also require that the records be kept in a safe or other approved office fixture at all times when the premises are not open for business. Insurance will apply while the records of accounts receivable are being removed to and while at a place of safety because of any imminent danger of loss or damage. In such a case it is best, for one's own protection, to send a letter to the agency informing the company that this is to be done. It's unwise to take this for granted even though so specified in the policy.

Just as in everything else in business there are different kinds of policies providing different degrees of coverage. Such detail should be examined very closely by any dealer before he buys an accounts receivable policy. Too little coverage, or one hedged with intricate detail, will put him in a position of having completely wasted the investment in a policy.

There are some basic coverages provided by most such policies. Dealers should make certain these are part of the one being considered:

1. All sums due from customers provided the dealer is unable to make collection as a result of the damage to records.
2. Interest charges on any loan to offset impaired collection.
3. Collection expenses in excess of normal collection costs and made necessary by the damage.
4. Other expenses, when reasonably incurred by the dealer in reestablishing records of accounts receivable following such a loss or damage.

Such a policy has its limitations which must be understood from the start. The standard forms issued by most companies exclude any loss or damage due to any dishonest, fraudulent or criminal act by any individual insured, a partner or an officer, director or trustee of the company, whether they be acting alone or in collusion with others. The policy will also exclude loss or damage caused by or resulting from hazards included in a standard Inland Marine War Risk clause.

As a part of a contract with the insurance company the dealer has some definite obligations. One of these requires a report to the insurance company within 20 days covering the amount of accounts receivable, with deferred payments and charge accounts segregated, as of the last day of each fiscal month. If he can arrange to keep such figures regularly in a separate account book in

a different storage area he can protect it from many types of damage to the master set of books and make settling of a claim quicker and easier.

There is also a condition in most such policies which limits the liability of the insurance company only for the excess of loss over the amount of any other insurance or indemnity carried by the insurer. All such policies are void if the insured attempts to conceal or misrepresent any material fact or circumstance concerning the policy or the subject thereof.

Procedure to collect on the coverage in the event of such damage or loss is usually set forth in the policy. Practically all companies require that the insured must give notice immediately to the company or its agent and if the loss is due to any violation of law, notice must also be given to the local police.

One obvious question always arises. What happens if the dealer is unable to accurately establish the amount of the loss, total of accounts, etc., at the time the damage occurs?

In such cases the insurance company agrees to base the amount on the monthly statements. This is usually computed by ascertaining the total amount of accounts on the last fiscal day of the same month in the year preceding that in which the loss or damage occurs.

The company will also ascertain the percentage of increase or decrease in the average monthly total of accounts for the 12 months preceding the month of loss or damage as compared with the same period in the preceding year.

Such policies also provide that there shall be deducted from the total amount of accounts the amount of such accounts evidenced by records not lost or damaged or otherwise established or collected and an amount to allow for probably bad debts which would normally have been uncollectible. Unearned interest and service charges are deducted on deferred payment accounts.

Delay in furnishing the company proof of loss may invalidate the normal policy. This should be the first step taken after discovery of the loss and best procedure is to call in the agent handling the policy for assistance in proper steps to follow. Usually the time allowed does not exceed 90 days from the date on which the damage occurred but the quicker the report is filed the easier it will be to have a claim paid under the policy.

Another point which will be included in the policy must also be borne in mind and should be understood at the very start. It is one around which controversy occurs in instances where businessmen have used this type of coverage for the first time and are not thoroughly acquainted with the provisions of the policy contract.

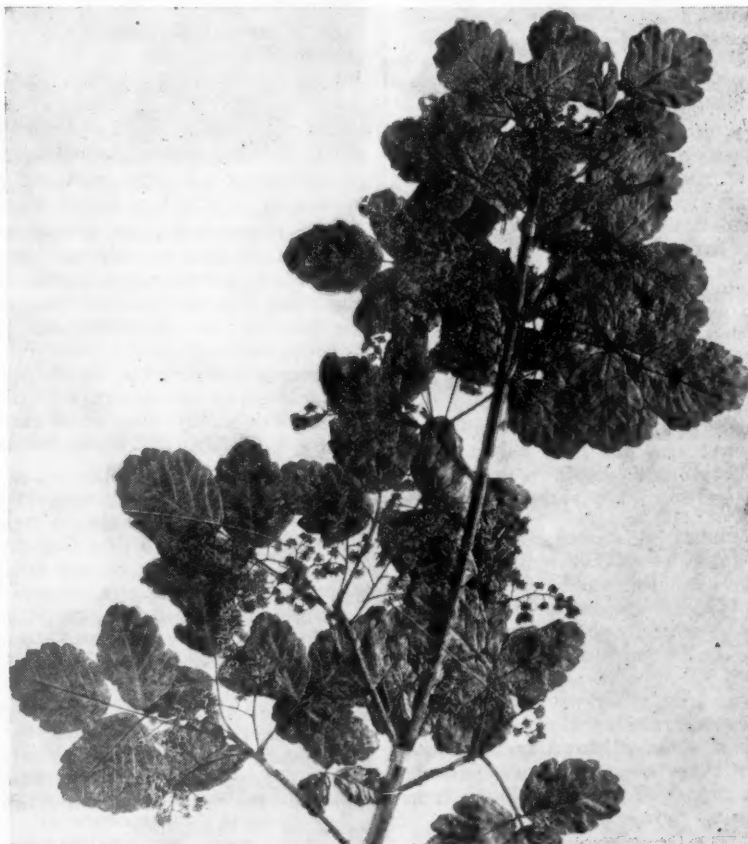
This is a provision that will be found therein whereby all amounts recovered by the dealer on accounts for which he has been indemnified belong to and are to be paid to the insurance company up to the total amount of the claim. All recoveries in excess of this amount belong to the dealer.

Usually such policies are written on a one-year basis after which they can be purchased on a three-year basis with some saving in the annual premium rate. The company cannot cancel the policy without five days notice to the insured and this must be in writing.

Premiums vary in different states, of course, but are usually at a very nominal figure.

WEED OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board



POISON OAK

How to Identify

Poison oak usually grows in the form of a shrub, with erect or sometimes clam-bering vine-like stems ranging in length from 3 to 15 feet. Leaves are grouped in threes, are alternate and glistening and from 1 to 4 inches long. Flowers are grouped in somewhat drooping panicles at the ends of the branches. Each flower is about $\frac{1}{8}$ inch long composed of five petals.

Damage Done by Plant

Poison oak has only indirect relationship to agriculture, it being a hazard to human beings who contact the leaves and receive sometimes serious blisters which are painful, itchy and troublesome.

Habits of Poison Oak

This plant, though called "poison oak," has no relationship whatever to the true

oaks. It is a woody perennial, reproducing by seeds and creeping rootstocks. It is found in many places, but particularly in dry rocky fields, pastures, fence-rows, banks and waste places, as well as in rich alluvial woodlands. It is widespread throughout the U.S. and southern Canada and is native to North America. The plant has some variation in habit and leaf form in different sections of the U.S., but general terminology is regarded as sufficient to cover its characteristics.

Control of Poison Oak

A number of chemical herbicides can do a complete job of controlling this pestiferous plant. Most authorities indicate the most effective time for application is late summer or early fall. Cultural methods are not easy, according to literature on the subject, since the entire plant should be grubbed out to prevent reinfestation.

Illustration of Poison Oak furnished through courtesy of the U.S. Department of Agriculture, Beltsville, Md.

Southern U.S. States Busy with Crop Harvest, Battling Boll Weevils

MEMPHIS, TENN.—The crop picture in the mid-South is one of harvesting on the one hand and of fighting insects on the other.

Cotton ginning was reported getting into full swing in central and south Mississippi, but in that state considerable trouble was reported with the boll weevil. Weevil infestation is heavy in many of the hill counties of northeast Mississippi, and the spread of the pest was being noted in some Delta counties.

"Boll worms, for the fourth straight week, continue to be the number one enemy in cotton fields of Sunflower County, Mississippi," said Cecil Black, county agent. "Most fields were found to be infested with boll worms, and quite a few with boll worm eggs. Damage was light as most farmers are now poisoning on a five- to seven-day schedule."

Growth of younger cotton, corn and soybeans was aided by rains in Mississippi.

In Arkansas, both rice and cotton are being harvested. Farm leaders say the early cotton crop as a whole is better than was expected, but the late crop outlook was reported as "uncertain." Boll weevils are just beginning to build up in most cotton fields, the extension entomologist reports, and boll worm moths are emerging in large numbers. Spider mite populations are declining but aphids are increasing, reports state.

Cotton picking was expected to pick up throughout west Tennessee with hot and dry weather. Red spiders, after causing some damage, were reported on the decline by the district extension agent, and boll weevils don't seem to be doing too much damage.

Calspray Names Howard Grady to Executive Post

RICHMOND, CAL.—The election of Howard J. Grady to executive vice president and member of the board of directors of California Spray-Chemical Corp. was announced by A. W. Mohr, president, following a meeting of the Calspray Board of Directors. Calspray manufactures the Ortho line of insecticides, fungicides, fertilizers and weed killers.

In making the announcement, Mr. Mohr stated that Mr. Grady will assist in the over-all management of the company at the head office in Richmond, Cal. For the past 10 years, Mr. Grady has served as Calspray's regional manager, marketing-East, with offices in Washington, D.C.

Mr. Grady joined the company in 1926 as a research entomologist. From 1931 to 1939 he served as Calspray's European representative, traveling extensively through western Europe and North Africa setting up plants and developing new markets for Calspray products. Returning to this country, Mr. Grady was named branch manager of Calspray's Portland office and later became manager of the Pacific Northwest Sales District. In 1948 he was sent to Washington, D.C., where he has remained to the present.

Aviation Group to Meet in Milwaukee

MILWAUKEE, WIS.—National Aviation Trades Assn. will hold its 19th annual convention Nov. 11-14, at the Pfister Hotel, Milwaukee. James R. Durfee, chairman of the Civil Aeronautics Board, will speak at the NATA annual banquet on Nov. 13.

Maintenance problems will be covered Nov. 11 by manufacturers' representatives, FAA and defense department personnel and service agency people. The National Aviation Maintenance Council will hold business meetings.

Nov. 12 session will be devoted

to agricultural applicator activities and research, flight training matters, sales promotion problems and items of general concern to all operators.

Nov. 13 sessions will focus attention on air taxi operations and National Air Taxi Conference business. Aerial applicators will study government contract program problems, safety matters and regulatory proposals.

Nov. 14 sessions will be concerned with applicator business, sales and public relations, items of general interest, resolutions and elections.

An "Old Milwaukee" fun event will close the convention proceedings.

NATA's executive committee will hold meetings before and after the convention.

Announcement of the forthcoming meeting of general aviation and fixed-base operators was made by Robert E. Monroe, assistant executive di-

rector of NATA. This will be the first four-day convention in NATA's history. Previous meetings had been of three-day duration.

Stored Grain Insect Conference Scheduled

MANHATTAN, KANSAS—A special conference on stored grain insects and their control will be held at Kansas State College, Manhattan, Oct. 21-24, according to D. A. Wilbur, who is in charge of the college's stored grain entomological studies.

Purpose of the conference is to give instruction in the basic principles involved in control of insects in stored grain, and in determining the success of insect control measures. There will be special emphasis on effective use of fumigants, though latest information for other insect control methods will be reviewed.

Mr. Wilbur said the conference is designed primarily for persons re-

sponsible for the safe storage of large quantities of grain, and for persons formulating, selling and distributing insecticides for use in controlling insects in stored grain.

The school is being sponsored jointly by the Kansas Wheat Improvement Assn., the Kansas Feed Grain Dealers Assn., the stored grain insect laboratory of the USDA's Agricultural Marketing Service at Manhattan, and by Kansas State College.

New Monsanto Treasurer

ST. LOUIS—The election of Patrick J. Dowd of St. Louis to the position of treasurer of Monsanto Chemical Co., was announced here by Charles Allen Thomas, president. Mr. Dowd, who assumed his new duties Sept. 1, has been director of administration for the company's Overseas Division. He succeeds Edward D. Toland, Jr., also of St. Louis, who has resigned.



**Why you'll
sell more
Grace
Urea
Prills
This Fall**

**Its special properties help build
a more profitable business for you**

In the fall of the year, you'll find Grace Urea Prills offer you a real opportunity for extra profits.

That's because Grace Urea Prills is a superior nitrogen fertilizer ideal for fall application.

Your customers can use Grace Urea Prills profitably for:

✓ Plow-down of crop residue. (Hastens decomposition of the fiber, so that it will not interfere with new plant growth in the spring.)

✓ Broadcast for small grains.

✓ Fall fertilization of pastures.

Recommend these uses to your customers. And be sure you supply them with Grace Urea Prills. This special free-flowing form of urea "weathers" wonderfully. Its anti-leaching quality is definitely superior to other solid nitrogen fertilizers. And it is *guaranteed 45% nitrogen*.

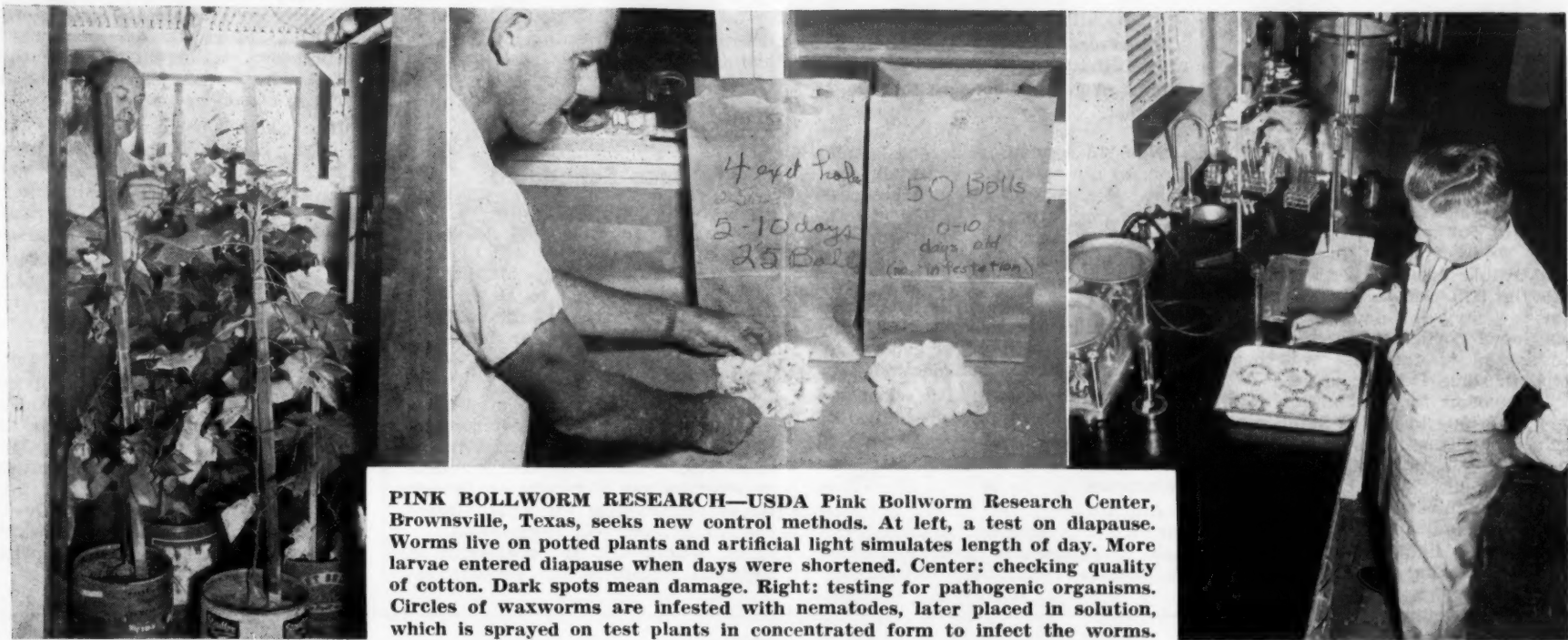
To build up the nitrogen content in liquid fertilizers, use either Agricultural Grade Grace Crystal Urea or Grace Urea Prills. Both dissolve readily, stay dissolved.



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PINK BOLLWORM RESEARCH—USDA Pink Bollworm Research Center, Brownsville, Texas, seeks new control methods. At left, a test on diapause. Worms live on potted plants and artificial light simulates length of day. More larvae entered diapause when days were shortened. Center: checking quality of cotton. Dark spots mean damage. Right: testing for pathogenic organisms. Circles of waxworms are infested with nematodes, later placed in solution, which is sprayed on test plants in concentrated form to infect the worms.

Rejuvenating Subsoils After Topsoil Goes Requires Lots of Fertilizer and Patience

EAST LANSING, MICH.—Generous doses of fertilizer and adequate amounts of lime coupled with good soil-building practices can bring many subsoils back into nearly full agricultural production within a few years after the topsoil has been removed.

Working with an acreage that was scalped of its topsoil, one Michigan State researcher, Dr. James Tyson, brought the area to nearly full crop production in less than six years.

Plenty of fertilizer, green manure crops of legumes and grasses and lots of manure were all the subsoil test plots needed to turn in good yields within four years. Corn yields on the subsoil were equaling the 80 bushel yields on normal soil.

"This isn't rebuilding a topsoil in a four or six-year period," the scientist cautions. "But it does show that where topsoil has been removed by poor cropping practices, erosion or other mechanical means, the subsoil can often profitably be farmed."

In working with a subsoil, moisture is one of the biggest problems, the test showed. It has to be well drained. Of course such results do not mean that farmers or others scalp their

lands of topsoil with the intention of trying to farm the subsoils. "Many subsoils are entirely unsuited to high production. Their structure drainage and fertility are not able to support big yields of crops," Dr. Tyson points out.

But there are a couple of places where it's necessary to "farm" subsoils. One is on the knobs of hills which have been left barren after topsoil has skidded down the sides. A little extra care on these bald knobs will help keep them in the yield race with the rest of the field.

An extra application of nitrogen fertilizer on exposed subsoils will also help boost crop yields. A farmer might put a whirling type fertilizer spreader on the tractor for adding nitrogen. When he comes to a spot where corn is short while cultivating, he could throw the lever and spray the area with some of the fertilizer.

NEW AGENCY

NEW YORK—International Paper Co. has appointed Ogilvy, Benson & Mather as its new advertising agency, it was announced by Richard J. Wiechmann, advertising manager.

New Virus Discovered By USDA Researchers Declared Significant

WASHINGTON—A new virus—the pea strain of the tobacco streak virus—has been isolated from naturally infected peas collected in southern Idaho, researchers of the U.S. Department of Agriculture have announced. The infection was first noted by USDA plant pathologist W. J. Zaumeyer during a disease survey in 1956. The virus has since been intensively studied by Mexican Ministry of Agriculture's Graciano Patino, who recently completed graduate work at the University of Maryland, and by Mr. Zaumeyer.

The virus was highly potent and lasting in storage. All of 30 bean varieties inoculated with it proved susceptible. However, no evidence of seed transmission has been found.

The pea strain of tobacco streak virus produces small areas of dead tissue on beans and other plants. Included among those affected are pepper, soybean, white lupine, petunia, and zinnia, as well as many members of the bean and pea families.

All studies were done in greenhouses at the ARS Agricultural Research Center, Beltsville, Md. The virus was maintained on Pinto and Stringless Green Refugee beans.

Symptoms produced by the virus on beans appeared on leaves in 36 to 48 hours following inoculation. The lesions were reddish brown, less than one-fourth inch in diameter, and sometimes circled with a yellowish ring. Lesions were larger when there were only a few present than when they were numerous. Tissues died along the veins of the inoculated leaves. Severely infected leaves usually dropped from the plant.

About 5 days after inoculation, dead areas showed upon the leaf petioles and stems. Leaflets systemically infected showed yellow stipple-like spots followed by dying of the veins and veinlets. In cases of severe injury, the leaflets were malformed.

Severe systemic infection caused the stem joints to redden and often killed the plant. Those that did not die were severely stunted. Although most of the pots of infected plants were normal, some developed reddish ringed patterns similar to those produced by the red-node virus. In general, the symptoms produced by the new virus were milder than those produced by the red-node type.

The virus was inactivated when held between 143° F. and 147° F. for 10 minutes. In fresh plant juice, the virus proved infectious when diluted 200 times but not when diluted 4,000 times. It withstood storage in juice at 72° F. for 26 but not for 27 hours, yet was very infectious after storage for 98 days in dry bean tissue at room temperature.

Nickle May Help Curb Wheat Rust, Tests Show

LONDON — A solution of nickel metal may prove to be an effective way of curbing stem rust in both resistant and susceptible varieties of the wheat disease, research indicates.

Tests with cobalt, molybdenum, copper, manganese and iron showed none of these affect rust development. However, nickel is "very effective in the prevention of rust development" in detached leaves of susceptible varieties of wheat, D. Wang, P. K. Isaac and E. R. Waygood of the University of Manitoba's botany department, Winnipeg, Canada, report. Zinc also had a slight inhibitory effect at high concentrations.

The scientists, reporting their results in the British scientific journal "Nature" here, believe it "unwise" to state that nickel acts as a fungicide. It apparently slows down the synthesis and breakdown of chlorophyll, according to studies of both green and blanched uninfected detached leaves.

Nickel inhibited both germination and growth of the rust fungus.

FERTILIZER STORE BURNED

WESTPHALIA, KANSAS — Fire destroyed the French Produce Co. seed and fertilizer store here Aug. 13.



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Dr. R. T. Allman

Dr. Allman Named to Head Canadian Fertilizer Group

MURRAY BAY, QUE.—Dr. R. T. Allman was elected president of the newly-formed Canadian Fertilizer Assn. at the first annual meeting held at the Manoir Richelieu, Murray Bay, Aug. 20-23.

A graduate of the University of Toronto and Cornell University, Dr. Allman is president and owner of the Bradford Fertilizer & Chemical Co.

In his opening remarks to the convention, Dr. Allman stressed the need for such a national organization as the Canadian Fertilizer Assn.

"Problems such as tariffs, transportation rates and legislative regulations are active problems facing our industry today," he said. "And we will need the support of this association in dealing with them."

In his address to the convention on the recent revisions to the Fertilizer Act, C. R. Phillips, head of the fertilizer and pesticide unit of the Canadian Department of Agriculture, emphasized that, wherever pesticides are custom-mixed by fertilizer manufacturers, the use recommendations must be acceptable to the Department of Agriculture.

Another speaker, Dr. George R. Smith, director of chemistry of the soils and fertilizer services of the Nova Scotia Department of Agriculture and the Nova Scotia Agricultural College, pointed out the demands that will be made on agriculture in the future.

"15% of the farmers are producing 85% of the produce sold off the land in the U.S. and Canada," Dr. Smith said.

"Within the next 25 years in the U.S. and Canada, we must produce crops to supply 40 million more people. And this must be done on a smaller land area than at present," he continued.

"This job will be done by our good farm managers who will overcome the present limiting factors of low soil fertility and high soil acidity. And these farmers will use substantially increased quantities of fertilizers and lime," Dr. Smith concluded.

Dr. Russell Coleman, executive vice president of the National Plant Food Institute, was also in attendance at the meeting and listed what he felt were three barriers limiting the proper use of fertilizers today. These were a lack of knowledge about fertilizers—particularly their economic values; fear of using too much fertilizer and damaging crops; and lack of adequate credit for financing.

BUYS FIRM

CINCINNATI—The Drackett Co. here has announced purchase of the Judson Dunaway Corp., Dover, N.H., makers of Bug-a-Boo insecticides and similar products. Judson Dunaway operates plants in Kentland, Ind. and Toronto, as well as at Dover.

Systemic Insecticides Reported Effective in California Trials

SAN FRANCISCO — A California study completed recently added further evidence that systemic insecticides are effective in the control of cattle grubs.

The study, which was carried out by the University of California Extension Service in the Imperial Valley, was followed by a report from Harold E. Thurber, Imperial county director and farm advisor, that loss from cattle grubs can be reduced by the proper use of new systemics.

These organic phosphorus compounds translocate through the tissue to the area containing the grubs. Two of them are presently approved—Trolene, administered as a bolus, and Co-Ral, used as a spray. Other materials are also presently under study.

The problem of cattle grubs in the

Imperial Valley is different from many areas, Mr. Thurber said, in that the area has both the northern and common cattle grub to combat. Weather appears to have very little direct effect on the development of the grub in the host, he said, because the body temperature of the host remains relatively constant. Climatic influences are restricted to that part of the year when the insects (pupae or heel fly) are not associated with the animal.

Based on present knowledge, the ideal treatment time for grub control with the new systemics would be prior to the arrival of the grub in the back. Treatment should be given about 45 days after the heel fly activity, he noted.

In some instances, a few adverse effects are noted, but the reactions are normally of short duration, and they disappear usually within 24 hours.

In the Imperial Valley trials, no adverse effects were seen. The trials

were conducted by the farm advisor's office in cooperation with Jackson Feed Yards and the Anza Packing Co. The report noted these observations:

1. Grub control is possible through treatment with organic phosphorus insecticides.
2. Time of treatment is of utmost importance.
3. No adverse reaction resulted from treatment.
4. Hide damage was minimized in treated animals.
5. Weight gain due to treatment was insignificant.
6. Steers were more responsive to treatment than heifers.
7. No carcass trim was necessary on the treated animals.
8. Considerable carcass trim was necessary on the non-treated animals due to grub damage.

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Fixed to Free Ratio	.9 to 1.0	Water	15.1
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FERTILIZER USE

(Continued from page 1)

graphic patterns of percent of acreage fertilized and of the primary nutrient rates per fertilized acre are depicted in Figures 1, 2, 3, and 4.

The percentage of the harvested corn acreage fertilized is lowest in the Great Plains where moisture is most frequently a limiting factor. In many of the dryland farming areas, 1% or less of the acreage receives fertilizer; however, in irrigated areas of the Great Plains as much as 40% receives fertilizer.

Proceeding eastward from the Great Plains, the percentage of the acreage fertilized increases rapidly. For example, 47% of the corn acreage

in Iowa is fertilized, 58 in Illinois, 93 in Indiana, 94 in Ohio, 97 in North Carolina, and 98% in South Carolina and Georgia.

The percentage of the acreage fertilized also increases to the west of the Great Plains primarily as a result of irrigation. Thirty-two percent of the corn acreage is fertilized in Utah and 48% in Idaho. In the Pacific states 63% of the corn acreage is fertilized in Oregon, 89% in California, and 92% in Washington.

The percentage of the acreage fertilized often appears related to kind of soil. For example, the Blackbelt soils of Alabama and Mississippi; the belt of deep loess

TABLE 1. Estimated use of fertilizers on corn in different regions of the U.S. during 1947, 1950, and 1954¹.

Region ¹	Acreage fertilized ²			Average rate per fertilized acre.								
				Nitrogen			Available Phosphoric Oxide			Potash		
	1947	1950	1954	1947	1950	1954	1947	1950	1954	1947	1950	1954
	-- Percent --			-- Pounds --								
Northeast	83	79	89	10	19	23	40	44	44	18	26	32
Corn Belt and Lake States	42	47	63	3	7	21	20	23	28	11	17	28
Appalachian	82	67	83	15	23	35	30	29	34	16	19	31
Southeast	92	89	94	18	18	34	24	19	28	15	13	23
Delta	56	73	74	18	33	44	12	7	18	6	6	15
Southern Plains	19	18	30	8	14	35	17	15	29	4	4	13
Northern Plains	4	7	20	22	20	34	6	12	17	1	<1	1
Mountain	6	5	22	4	21	56	26	40	11	-	4	1
Pacific	26	12	86	42	50	64	22	46	19	8	11	2
U. S.	44	48	60	10	15	27	23	23	28	12	15	25

¹Northeast: New England, New York, Pennsylvania, New Jersey, Delaware, Maryland; Corn Belt and Lake States: Iowa, Missouri, Illinois, Indiana, Ohio, Minnesota, Wisconsin, Michigan; Appalachian: West Virginia, Virginia, Kentucky, Tennessee, North Carolina; Southeast: South Carolina, Georgia, Alabama, Florida; Delta: Mississippi, Arkansas, Louisiana; Southern Plains: Texas, Oklahoma; Northern Plains: North Dakota, South Dakota, Nebraska, Kansas; Mountain: Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico; Pacific: Washington, Oregon, California.

²Planted Acreage was used as a basis for calculating the percentage of the acreage fertilized in 1947 and 1950 and harvested acreage in 1954.

TABLE 2. Corn: Acreage harvested and percent fertilized, and estimated use of fertilizer and primary plant nutrients, by states, 1954.

State	Total acres harvested ⁽²⁾	Harvested acres fertilized ⁽¹⁾	Fertilizer applied ⁽¹⁾	Rate of application of nutrients per fertilized acre ⁽¹⁾		
				Nitrogen	Available phosphoric oxide	Potash
	1,000 acres	Percent	1,000 tons	-- Pounds --		
Alabama	2,314	93	417.9	45	35	23
Arizona	15	100	---	57	21	14
Arkansas	710	51	41.9	34	16	14
California	143	89	23.0	63	11	1
Colorado	396	23	8.0	57	5	0
Connecticut	33	79	9.9	22	83	43
Delaware	169	88	37.8	42	49	49
Florida	532	70	60.5	39	32	23
Georgia	2,760	98	499.4	25	23	22
Idaho	44	48	3.2	58	34	0
Illinois	9,026	58	877.3	25	19	25
Indiana	4,791	93	667.4	22	38	42
Iowa	10,265	47	432.5	26	22	16
Kansas	2,034	28	33.9	20	23	2
Kentucky	1,962	79	221.1	15	33	27
Louisiana	606	71	49.4	50	10	9
Maine	11	90	2.7	36	78	67
Maryland	498	95	98.6	17	35	28
Massachusetts	26	87	6.8	22	83	43
Michigan	1,871	83	164.5	14	28	28
Minnesota	5,406	41	173.8	15	26	20
Mississippi	1,628	85	212.1	45	20	17
Missouri	4,029	64	309.5	31	27	24
Montana	156	2	.3	17	27	0
Nebraska	6,732	27	117.3	42	15	1
New Hampshire	11	83	1.9	27	64	48
New Jersey	190	90	58.7	61	61	55
New Mexico	40	10	.4	42	41	1
New York	713	87	131.8	28	56	34
North Carolina	2,030	97	---	53	35	33
North Dakota	1,226	11	4.7	4	22	2
Ohio	3,557	94	497.5	13	37	36
Oklahoma	277	40	10.4	22	25	9
Oregon	28	63	2.0	51	26	2
Pennsylvania	1,276	89	202.4	15	35	24
Rhode Island	6	70	1.4	40	61	61
South Carolina	1,051	98	224.9	34	26	26
South Dakota	4,014	6	14.0	20	18	<1
Tennessee	1,839	72	160.6	23	24	20
Texas	1,837	28	64.4	37	30	14
Utah	37	32	2.1	106	0	0
Vermont	58	73	7.6	22	54	40
Virginia	876	89	231.8	53	49	53
Washington	37	92	6.8	75	45	7
West Virginia	189	62	22.5	28	43	30
Wisconsin	2,603	80	207.2	11	31	31
Wyoming	53	33	---	22	5	<1

¹Estimates based on data from Soil and Water Conservation Research Division, U.S. Department of Agriculture.

²Revised.

FIGURE 1—The percent of harvested acreage fertilized for corn during 1954.

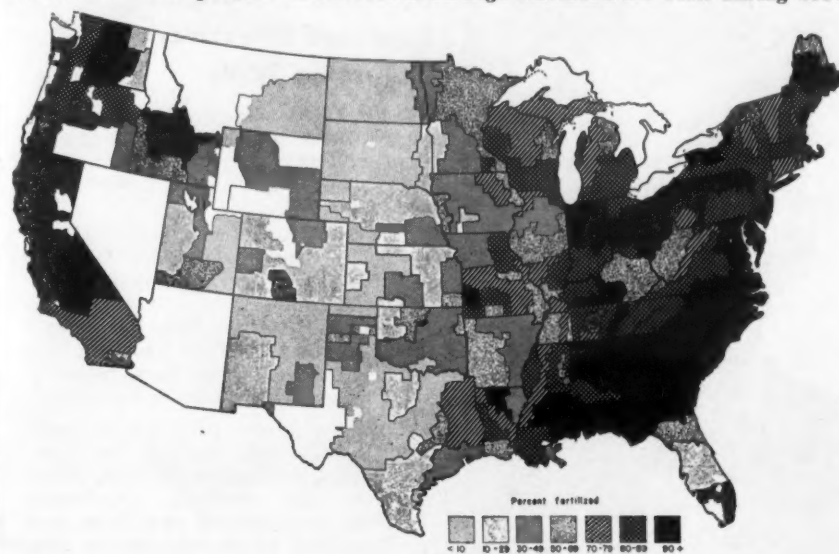


FIGURE 2—The estimated rate of N used to the fertilized acre for corn during 1954.

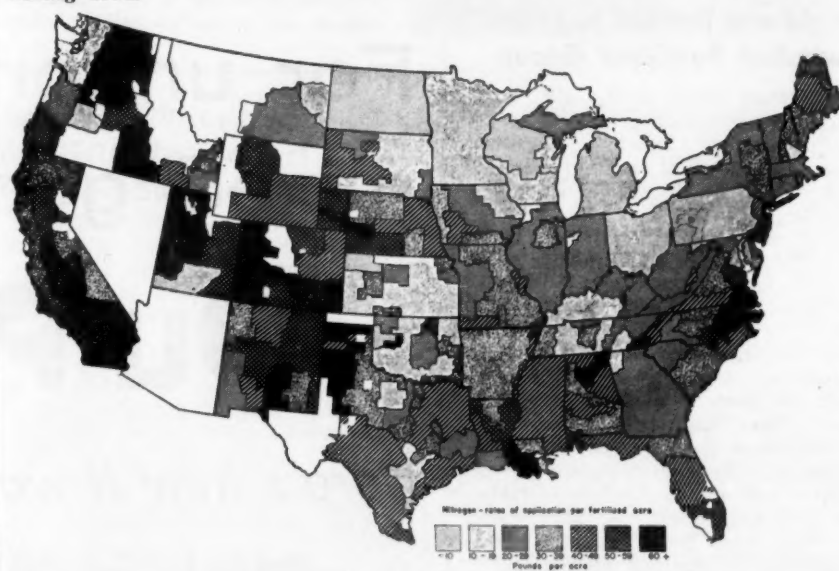


FIGURE 3—The estimated rates of available P₂O₅ used to the fertilized acre for corn during 1954.

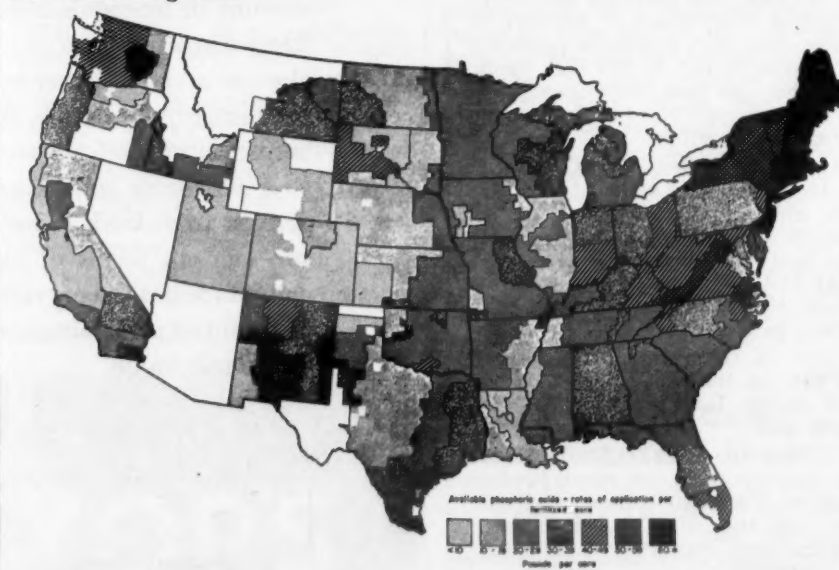
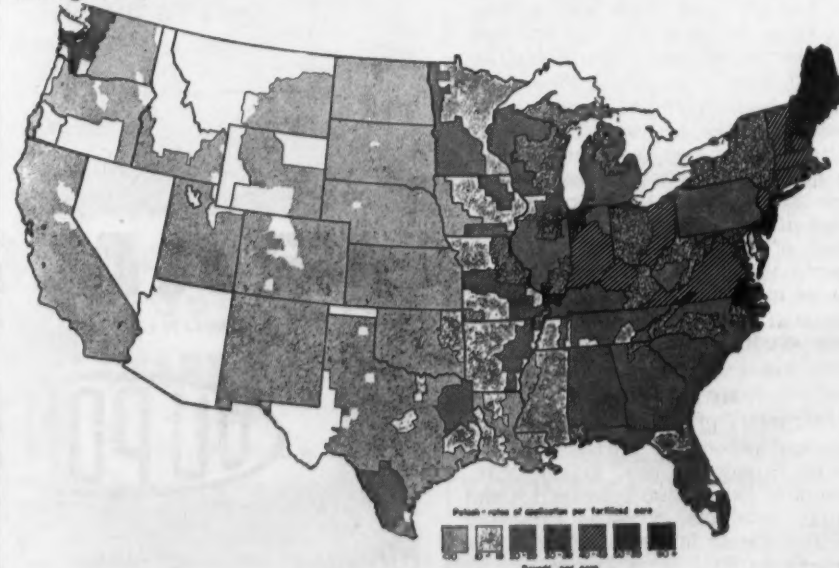


FIGURE 4—The estimated rates of K₂O used per fertilized acre for corn during 1954.



hill and terrace soils extending through western Mississippi, Tennessee, and Kentucky; and the Fayette-Seaton soils of eastern Iowa all receive less fertilizer than adjacent soils.

The Kenyon-Floyd-Clyde and Skyberg-Cresco-Clyde soils of northeastern Iowa and southeastern Minnesota receive more fertilizer than the adjoining Clarion-Nicollet-Webster soils to the west. The Fargo-Bearden soils of the Red River Valley of North Dakota and Minnesota also receive more fertilizer per acre. The Barnes-Aastad soils of western Minnesota receive less than the Clarion-Nicollet-Webster soils to the east.

Differences in percentage of the corn acreage fertilized that can be related to soils are most numerous in states where neither a uniformly high percentage nor uniformly low percentage of the corn acreage is fertilized. Thus, soil association relationships are most frequent in the two tiers of states starting with Minnesota and Wisconsin and extending through Louisiana and Mississippi. Few soil-fertilizer use relationships can be observed in states such as North Carolina, South Carolina, Georgia, and Alabama where practically all of the corn acreage is fertilized or in the plains states where a very small percentage is fertilized.

Striking variation in the percentage of the corn acreage fertilized often occurs with similar soils when found on both sides of a state line. Examples of this occur particularly between Tennessee and adjoining states and between Arkansas and adjoining states.

Nitrogen applications per fertilized acre are highest in the irrigated areas of the western states. Some irrigated areas in New Mexico, Utah and Oregon report over 100 lb. N an acre; however, most of the irrigated areas use from 50 to 80 lb. N an acre. Of interest are the state-wide averages for a number of the western irrigated states. Estimated average for Utah is 108 lb. N a fertilized acre, Washington 75 lb., California 63, Idaho 58, and Colorado 57.

Lowest N rate reported on a state-wide basis is 4 lb. to the fertilized acre in North Dakota, although rates of 10 to 20 lb. are common for fertilized land in most of the strictly dryland farming areas of the Great Plains. The low rates in North Dakota apparently reflect the use of a small amount of N in starter fertilizers.

The dairy states, Minnesota, Wisconsin and Michigan, use only small amounts of N apparently as a result of the application of large amounts of manure to the corn crop and to the widespread use of legume forage crops in the rotations. Average for the three-state area is 13 lb. N to the fertilized acre. Northeastern Iowa and northwestern Illinois, which are contiguous dairy areas, also use only small amounts of N. Ohio and Pennsylvania indicate low N rates as does western Kentucky and central Tennessee.

The quantities of N to the fertilized acre also show some relationship to kind of soil, although not to the extent that exists with the type of farming. The alluvial soils of the lower Mississippi River and those of the Red River Valley of Louisiana; the Marshall and Shelby-Sharpsburg soils of Iowa, Nebraska, Kansas and Missouri; the Blackbelt and northern limestone soils of Alabama; and the coastal plain soils of Virginia, North Carolina and South Carolina are examples of a number that receive higher rates of N than most of the adjacent soil areas.

With the exception of Maryland and Pennsylvania, P_2O_5 rates per fertilized acre are highest in the northeastern states. The eleven northeastern states average 44 lb. P_2O_5 a fertilized acre. States outside of the

NEXT WEEK . . .

The consumption of fertilizers on wheat in various sections of the U.S. will be covered in Part V of this series.

northeast where 35 lb. P_2O_5 or more are applied per acre include Virginia, West Virginia, North Carolina, Indiana, Ohio, New Mexico and Washington. High rates are used also in some of the western irrigated areas.

Lowest rates are associated with the alluvial soils of the lower Mississippi and Red River Valleys in the South, the dry farming areas of Great Plains, the Marshall and Sharpsburg soils in Iowa, and the state of Illinois. The low rates in Illinois, averaging only 19 lb. to the fertilized acre, apparently reflect the long continued rock phosphate fertilization program.

Except for Mississippi, K_2O rates on corn are highest in the states east of the Mississippi River. The tier of states immediately west of the Mississippi River represents a transition between the higher rates to the East and the very low rates of the West.

Several interesting relationships exist between kind of soil and rates of K_2O . Very low rates, averaging 6 lb. K_2O to the fertilized acre, are applied on the alluvial soils of the lower Mississippi and Red River Valleys. In the Midwest, certain poorly-drained soils receive higher K_2O rates than surrounding areas. These include the Kenyon-Floyd-Clyde and Skyberg-Cresco-Clyde soils in northeast Iowa and the Shelby-Seymour-Edina and related soils in southern Iowa; the Putnam-Cowden and related soils in northeast Missouri, the Cherokee-Parsons soils of southwest Missouri, and the Swygert-Bryce-Clearance and related soils in northern Illinois. Also, soils west of the Cascade Mountains in Washington developed under a high rainfall, receive more K_2O than soils to eastward which developed under low-rainfall.

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- (1) Ibach, D. B., Adams, J. R., and Markeson, C. B. 1957. Fertilizer Used on Crops and Pasture in the U.S. 1954 Estimates. U.S. Department of Agriculture, Statis. Bul. 216, 55 pp., illus.
- (2) U.S. Bureau of the Census. 1955. Census of Agriculture: 1954.

Gibberellic Acid Boosts Yields in Illinois Experiments

URBANA, ILL.—Two University of Illinois agronomists, C. J. Wargel and R. W. Howell, report that spraying small soybeans with gibberellic acid causes lower stems to grow longer than usual, causing the pods to form higher from the ground. The additional height allows more pods to get into the combine and lessens the number left in the field. This effectively increases yield, the researchers report.

Mr. Wargel and Mr. Howell said gibberellin has shown the most effect in their tests when applied soon after beans come up, although the chemical may cause the stems to weaken when small plants are sprayed. Treating the seed before planting has caused poor stands, and the chemical has not shown desired effects when applied to larger plants, say the researchers.

First results show no change in date of maturity or chemical composition of gibberellin-treated beans over untreated control plots. More complete results will be available when the 1958 experimental plots are harvested.

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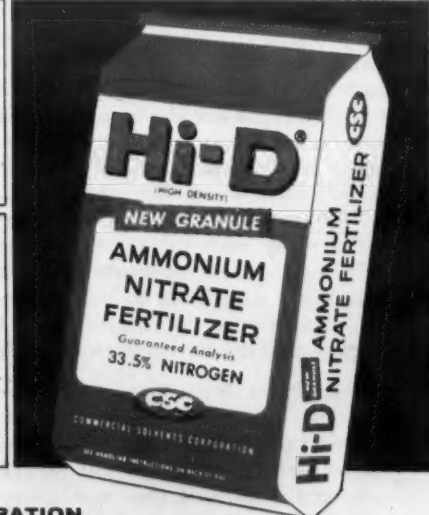
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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

Top Crop Yields Mean Low Production Cost

By Dr. Vincent Sauchelli

Chemical Technologist, National Plant Food Institute, Washington, D.C.

ONE thing I would like to see spelled out more specifically is the fact that good crop production is the first prerequisite of a successful farmer. I was talking to an agricultural economist last week. He felt that the main problem with agricultural economists is the fact that they do not realize the great importance of top crop yields."

The sentiments in the above quotation were expressed to me in a private letter by one of the ablest thinkers in the fertilizer industry. He put his finger on one of the most important factors in profitable farming that needs constant, repetitive emphasis. The importance of top crop yields lies primarily in the fact that only by such yields can a farmer enjoy a profit from his enterprise. Top crop yields mean a low crop unit cost of production.



Dr. Sauchelli

To obtain such top yields the indispensable tool in modern farming is the prudent application of fertilizers. The right kind and amount of plant nutrients needed to obtain top yields are governed by the particular crop, the selected field and the availability of the plant foods already in the soil as determined by a suitable soil test. Other factors, of course, are influential, such as the amount and kind of soil organic matter, soil moisture and structure, lime, and secondary and trace elements.

The farmer should have a good understanding of the plant nutrient requirements of each crop and learn how to supply those requirements most effectively. This may be a counsel of perfection. The recent NPSI survey of "Farmers' Attitudes Toward the Use of Fertilizer" revealed only too clearly that the average American farmer, operating 100 or more acres, does not understand the fundamentals of chemical fertilizers.

With such limited knowledge and general lack of understanding about fertilizers the practice of selecting and applying the right kinds and amounts of fertilizers for each crop may be beyond his capabilities. The survey did show that the average farmer seeks information and advice from others as a means of overcoming his uncertainty and deficient knowledge. The local county agent, fertilizer dealer, extension service worker, the farm journals and fertilizer technical service men and salesmen must be relied upon as sources of information on the why's and wherefore's of top crop yields. These are the men Mr. Average Farmer goes to for guidance and instruction.

Let it be conceded that most farmers who are using fertilizers know that they do more or less what is expected of them: They "work." Many have the ready cash to invest in larger amounts of fertilizer than currently used, but lack the information and confidence to put on their crop land enough fertilizer to get the greatest total profit per acre—that is, top crop yields. Why is this?

Fertilizers have been known and used for close to a century. The NPSI survey showed that farmers generally consider the use of fertilizers is good but are very cautious in the amount they would use if they had plenty of money. Lack of adequate knowledge of how plants feed and how plant nutrients influence the quantity and quality of crops, fear that an excess of the amount now used would "burn out the crop" and other negative factors were revealed by that survey.

Undoubtedly many reasons exist why a farmer

will buy fertilizer, but the all-impelling factor is the desire to earn more money. When he pays out \$1 for fertilizer he believes his chances are good of making that \$3 to \$5 extra crop value on his investment that he has been led to expect. Thus, economic consideration becomes the central, motivating power that generates sales.

We in the fertilizer industry will have to organize a simple, straightforward method of showing the farmer the economic value of fertilizing for top crop yields. This has been done in the case of most commercial vegetable crops, cotton, tobacco, citrus, sugar cane and a few others. These crops are generally well fertilized because of their high per-acre value. This has not yet, apparently been shown for pastures and grasslands. But even in the case of those special crops which are now fairly well fertilized, the records show that they are not uniformly fertilized at a high level.

In general, the average rates of application in every state are far below those recommended by the local authorities for top crop yields and optimum returns. The average per-acre application of plant nutrients* for example, in the Southeastern states for the following specified crops has been remarkably low:

Corn, 15 lbs. of nitrogen, 13 lbs. of P_2O_5 , 8 lbs. of K_2O .

Cotton, 15 lbs. of N, 15 lbs. P_2O_5 , 10 lbs. K_2O .

Rice, 11 lbs. of N, 8 lbs. P_2O_5 , 4 lbs. K_2O .

Tobacco, 37 lbs. N, 90 lbs. P_2O_5 , 65 lbs. K_2O .

Progress is being made, however, even though it is slow. Our job as advisers to farmers is to impress upon them the economics of fertilizer usage: That profit returns are highest when fertilizer applications follow experiment station recommendations and are combined with good soil management practices, seed of superior varieties, optimum plant populations, weed and pest control, and liming. This program presented in simple, jargon-free language and adapted as nearly as possible to the farmer's specific needs will spell "Profit."

*Figures given by Dr. W. E. Colwell (N. C. Expt. Station in 1953).

Protecting Stored Grain Important as Growing It

THE importance of protecting stored grain and other agricultural produce from insects is too well known in the trade to emphasize here, but John J. Durkin, extension entomologist at New Mexico A&M College, has given his constituents some good advice worth passing along.

"The insects didn't help you raise your grain, so don't let them share it with you," he admonishes.

"It doesn't take long for insects and rodents to undo all the efforts and expense of producing a grain crop," he continues. "Just because you put your grain out of sight in a bin, don't forget about it."

"Keeping stored grain free of insects and rodents is as much a part of grain production as proper planting, fertilizing, irrigating, and harvesting. Stored grain pests destroy 10 to 15% of the farm-stored grain crop each year in New Mexico," he told his people in a recent letter. "Some farmers with badly infested grain may lose as much as 50% of their crop after it is harvested."

The entomologist thereupon urged all farmers to rat and mouse-proof their bins, set up rodent bait stations, and fumigate grain within six weeks after it goes into storage.



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EXECUTIVE AND EDITORIAL OFFICES—2501 Wayzata Blvd., Minneapolis, Minn. Tel. Franklin 4-5200. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by

THE MILLER PUBLISHING CO.

2501 Wayzata Blvd., Minneapolis, Minn.

(Address Mail to P. O. Box 67, Minneapolis 40, Minn.)



Associated Publications—The Northwestern Miller, The American Baker, Farm Store Merchandising, Feedstuffs, Milling Production.



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